Operating instructions

TELE-Network

user's manual
english
for

TELE-PROFessional-II

Version 1.5

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1 Preface

The TELE-Network devices were developed especially for the remote maintenance of plc-systems. This means that the device is geared completely to industrial necessity, from its mechanical configuration to its handling. The compatibility of the TELE-Network devices with the original programming tools of the respective plc-manufacturer has highest priority. Their connection mechanics, pin seizure, and electrical data meet the specifications of the respective controls. Thus, users can work directly and without special adapters with the normal cables of the devices they want to connect, like for example PGs and control units.
All TELE-Network devices have the same hardware structure. The complete electronics are integrated in a metal casing.

The TELE-PROFessional-II is available in 2 variations.

1. *9372-OEM (without PCMCIA-slot for UMTS-/LAN-card)*
2. *9372-OEM-H (with PCMCIA-slot for UMTS-/LAN-card)*
3. *9372-FLAT (flat variant without PCMCIA-slot for UMTS-/LAN-card)*
4. *9372-FLAT-H (flat variant with PCMCIA-slot for UMTS-/LAN-card)*

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2 Description

The TELE-PROFessional-II can be connected with the integrated 33K6 V42-BIS HIGH-SPEED-Modem direct to the telephone connector of your local telephone provider and at every analogue port of your telephone system. You can connect this device also to a digital connector, ISDN S0-port. The provided protocol is DSS1 (Euro-ISDN) or 1TR6 (national ISDN).
To connect a plc type, the device has the correct plug on board. For teleservice a S5 plc you use the additional S5-Kabel for connect the TELE-PROFessional direct to the programming port of this plc. You can connect also to the 15pin female plug a PG or PC to communicate with the integrated multiplexer. Or, in the office, you can connect direct your PG or PC with the correct interface cable to this port. If you want to connect the device to a S7 plc, you use the integrated 9pin female plug. With this port, you are able to make connections to MPI- and Profibus with baudrates from 19K2 up to 12 MBaud. For S7-200 you have to use a RS232-PPI-cable like the MPI/PPI-cable connected on the port PLC-V24.
The connection to a not provided plc is also possible. For this purpose, the device has 2 9pin D-SUB plugs, one male the other female. From the PC you can connect to the TELE-PROFessional with a standard serial cable, 9pin 1to1. The other plug (male) has the same pinning like a PC, so you connect the plc with its own programming cable.
The device has also 2 USB-ports. For example, you can connect a memory stick (in the moment not provided) for the extension of the memory of the device. The provided standard of the usb-port is USB1.1. Or, you can use the 2 PCMCIA-Slots (only for version -H) for some special functions. You can connect a Handy to the serial 9pin male port. You use for this the standard download cable of the handy. If you make S7-teleservice, you don't need this port, because you have connected the plc to the on board mpi/profibus-port. For teleservice of the S5, there must be some changes. The plc is not connected to the PLC-port, it is connect with the cable CP-Kabel, article number 9359-90 to the multiplexed PG-port. It is very important, that the handy has an own number for this data transfer, you need for this a special kind of the contract with your provider.
The TELE-PROFessional-II is connectable with a patch-cable to the Ethernet. So, you can make a prolongation of your home Ethernet with the Ethernet of the plc side. This function will be called "routing". So, you can reach plc or pc they are connected to this network.
The device can be fastened directly to the switchboard. Fixing straps for the Hut- and C- contact rail are optionally available.

The operation of these remote maintenance units is only allowed if a supervising person is present who can intervene in the installation at any time. Please do not intervene in running programmes without visual communication or control.
Before installing the TELE-LINK-Network devices, please connect them by all means with earthing PE at the casing or at the screw terminal!
Please read the user´s manual closely before installing the device. There is no responsibility taken for damages due to incorrect connection or handling.

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3 System requirements

3.1 Requirements

The following requirements are demanded for the system environment of the TELE-Network devices:

- 230V line voltage which supplies the power pack of the plug (optional) or
- 24V DC with at least 360mA load current or
- TAE-mains socket of the Telekom, (N-coded), normally 3pin socket: NFN <=> N = Extension device (modem, fax), F = Telephone, N = Extension device or
- ISDN-connector (S0-bus) Euro-ISDN (DSS1) or national-ISDN (1TR6)

3.2 Features

- CE
- compatible with all SIMATIC-S5-PLC´s
- compatible with SIMATIC-S7-300/400-plc (connection of PLC-TELE by S7 via standard MPI-cable with the MPI-connectors or the cable with article number 9379.1)
- compatible with SIMATIC-S7-200-plc (connection of PLC-TELE by S7 via MPI/PPI-cable or ppi-adapter)
- ONLINE with the plc at the customer in a few seconds
- suitable for industrial use and in agreement with CE
- integrated HIGH-SPEED-modem with LineQualityControll-Functions, shorten LQM
- integrated ISDN-connector for Euro-ISDN (DSS1) or 1TR6
- 2 PMCMIA-slide-in unit for PCMCIA-plug-in cards (only for version -H)
- can be operated by all original and compatible programming devices
- second interface; select either Mulitplex operation for the operation of a 2nd PG / PC / control device / ...or as a connection for a 2nd plc / CP for L1 / L2 / H1/ ... from the PG-TELE, PLC 1 or PLC 2 can be switched **only for S5-devices**

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- supports the operation at the H1, L1, and L2 with reference to bus-dialling
- supports the operation KOR/MUX of Siemens, as well as PG-BUS
- operation software is saved in the flash memory which makes the updating of the software easier
- absolutely simple to set parameter values
- module which checks all the device functions and the voltage supply
- the electronics to the telephone network, to the external voltage supply, to the plc and to the programming device are dc-insulated.
- compact device in a metal casing
- easy mounting into the switchboard
- tough sheet-steel casing with a flange
- optional power supply 24V/DC or 230V/DC (24V plug-in power supply 350mA)
- circuit arrangement that fits the EMV
- easy handling because of menu drive and LCD-display in the uncoded text
- easy and fast configuration because of the menu item “first configuration“
- in the PG, a software driver is not necessary; the complete handling is taken over by the TELE-PROFessional-II (after dialling the target system, the plc is “on your desk“ inclusively the interface-cable). You communicate only “serial” with port PG-RS232.
- only one device for several controls:

  Siemens S5 & S7
  AEG
  Allen Bradley
  Bosch
  Mitsubishi
  Klöckner Moeller
  GE Fanuc
  Selectron
  Tele-Mechanique Premium TSX57

- safe data transmission because of a multiply protected data protocol, e.g. modules are only transmitted to the plc after they have been checked for their correctness
- all PG-functions can be carried out via the telephone line or the portable phone

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- PG-coupling possible
- world-wide use possible, connection to GSM-net optional
- high data protection because of multistage password levels
- optimisation of telephone costs because of the recall function
- telephone register for 197 phone numbers is integrated into the TELE-device; this guarantees quick and easy calling of the desired target system
- compatible world-wide to all TELE-network devices
- software updates and options transmittable by the telephone line
- update and hotline service are for free
- integrated Web-Browser for configuration the device
- possible / integrated functions:
  fault report via the fax
  data transmission to higher-ranking plc
  data transmission to pc-server
  data transmission Scall, Quix, SMS-message (standard in Siemens Network-devices)
  printer connection
  L2-BUS-interface
  configuration of control devices (e.g. Siemens-OPs /PCS/ ...) (OP´s standard for the Siemens Network-Devices)
  CAN-BUS-interface
  Interbus-S-interface
  image transmission (digital camera)
  sending of e-mail
- coupling via VPN
- coupling via ethernet

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4 Scope of delivery and accessories

4.1 Scope of delivery

The TELE-PROFessional-II is delivered without any accessories. Additionaly required accessories can be purchased later on. For more information please read chapter 4.2 *Optional accessories*

4.2 Optional accessories

4.2.1 Interfaces switcher

Order number	Article description
9370-KOR	KOR-MUX / TELE-Switch

4.2.2 Win-TELE-PROF

4.2.2.1 S5

4.2.2.1.1 Ground package

Order number	Article description
9372-PC-S5	Win-TELEPROF Software S5 Ground package single license
9372-PC-S5-S	Win-TELEPROF Software S5 Ground package Subsequent license
9372-PC-S5-F	Win-TELEPROF Software S5 Ground package company license

4.2.2.1.2 Add-on package

Order number	Article description
9372-PC-S5-X	Win-TELEPROF Software S5 Add-on package single license
9372-PC-S5-X-S	Win-TELEPROF Software S5 Add-on package Subsequent license
9372-PC-S5-F-X	Win-TELEPROF Software S5 Add-on package company license

4.2.2.2 S7

4.2.2.2.1 Ground package

Order number	Article description
9372-PC	Win-TELEPROF Software S7 Ground package single license
9372-PC-S	Win-TELEPROF Software S7 Ground package Subsequent license
9372-PC-F	Win-TELEPROF Software S7 Ground package company license

4.2.2.2.2 Add-on package

Order number	Article description
9372-PC-X	Win-TELEPROF Software S7 Add-on package single license
9372-PC-X-S	Win-TELEPROF Software S7 Add-on package Subsequent license
9372-PC-F-X	Win-TELEPROF Software S7 Add-on package company license

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4.2.3 PLC- connection cable

Order number	Article description
9361-3	PLC- connection cable 15pins (S5) 3 m
9361-3.05m	PLC- connection cable 15pins (S5) 5 m
9361-3.06m	PLC- connection cable 15pins (S5) 6 m
9361-3.10m	PLC- connection cable 15pins (S5) 10 m

4.2.4 Accessories

4.2.4.1 Mounting accessories

Order number	Article description
9391-MT	Mounting set for DIN-rail-holder

4.2.4.2 Other accessories

Order number	Article description
9372	TELE-PROFessional-II Starter-Kit
9379.1	MPI-/Profibus connection cable 1m
9391.1	24V DC power supply 625mA Primary 100-240V AC
9372-24	Power connector 3pins big
9371-6	Servicebag (Only for Flat-Version)

4.2.4.3 Phone accessories

Order number	Article description
9370-8-D/USA	Phone-cable analogue Germany / USA
9370-8-ISDN	Phone-cable ISDN
9370-8-AT 9370-8-BE 9370-8-CH 9370-8-DK 9370-8-FR 9370-8-GB 9370-8-IT 9370-8-NL	Special phone-cable analogue AT / BE / CH / DK / FR / GB / IT / NL
9370-Set	Phone-connector-set 16parts (worldwide use)
9370-TAE	TAE junction box

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5 Handling

General:
There are two ways to configure a TELE-PROF-II

1. Via the integrated Web Interface (see chapter 5.1 *Web browser*)
2. Via the implemented Keypad (see chapter 5.2 *On-Site Configuration*)

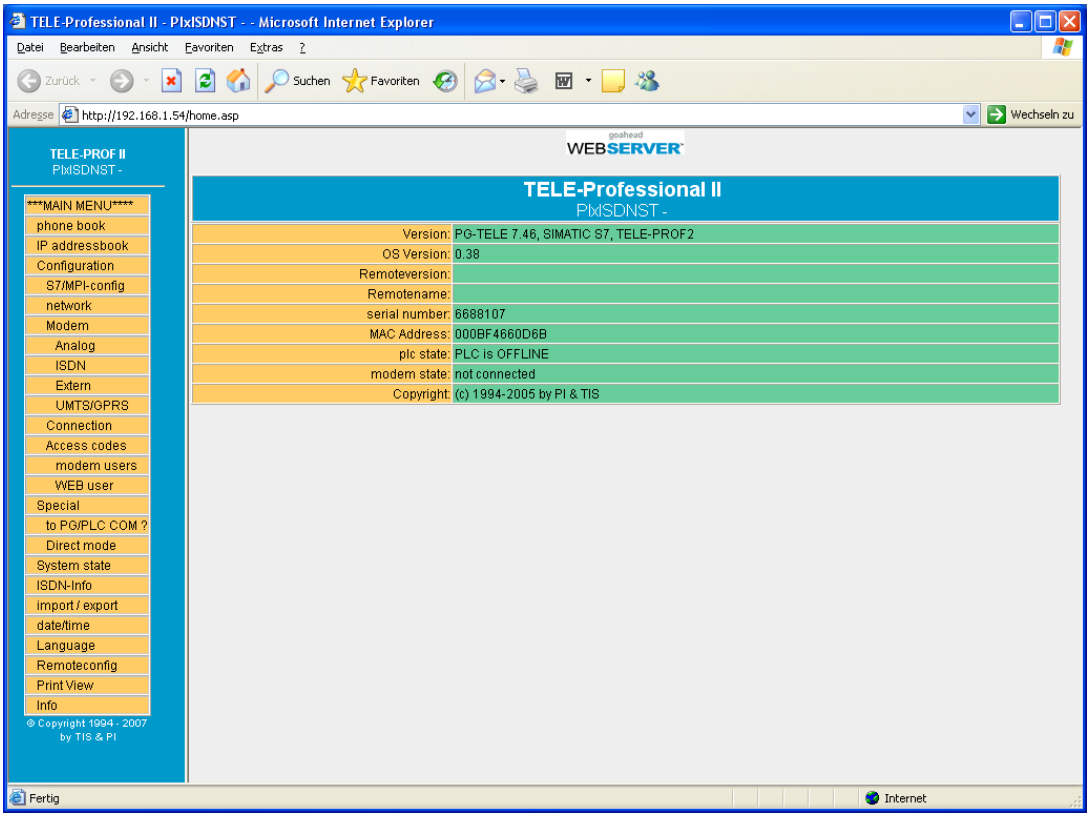
5.1 Web browser

A prerequisite for configuration via Web browser is a correct IP-Address corresponding to your PC and a connection to a hub/switch or directly to your PC with a cross-over-cable. A configuration with a PC via the serial interface is not possible.

Start a Web browser of your choice (e.g. Internet Explorer) and type the IP-Addresse of your device into the address-field. The default value of the IP-Address for the TELE-PROFessional-II is **192.168.1.54**, so you should enter the following address:

http://192.168.1.54

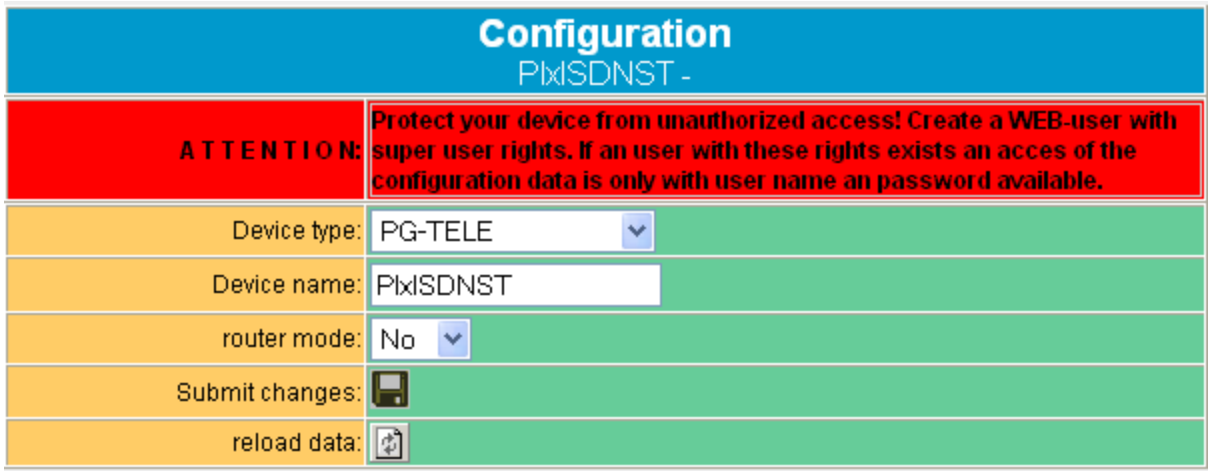
The Web-Server of the TELE-PROFessional-II will be started like following:



Now, you can click with your mouse to the menu items on the left hand side and configure the device.

5.1.1 Access protection via WEB-Browser

From Version 6.70 the TELE-Prof II has an Access protection via WEB-Browser. Therefore we use the integrated login mechanism of your WEB-Browser. If no user exists yet the access will be granted without entering a password.
However a warning that your device is not protected from unauthorized access will appear on every page. This can look for example like following:


Configuration
PlxISDNST -
ATTENTION:
Protect your device from unauthorized access! Create a WEB-user with super user rights. If an user with these rights exists an acces of the configuration data is only with user name an password available.
Device type:
PG-TELE
Device name:
PlxISDNST
router mode:
No
Submit changes:
reload data:

You can create several users with the corresponding rights under *Configuration→Access codes→WEB user*. You will get the following input capabilities:

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Please enter: full name, Username, Password and the rights.
First and foremost you should create a Superuser (right) SU. As soon as this one exists you will be asked for a Username and Password at the next access.

Please note your Username and Password!

The „full name“ is just for information. For login you will need the Username and Password.
When logged in as Superuser you have the rights to change every setting.
Furthermore there are userrights U1 … U5 whereas U1 has more rights than U5. Each higher level automatically includes the rights of the lower level, that means
U1 includes U2 – U5
U2 includes U3 – U5 etc.

(however with further developement there will be differences for each group)

If no User with SU-rights exists, an unchecked access is possible!

Currently the groups differ from each other like following:

SuperUser	Can watch and edit everything
U1	Read only Can not edit anything Connect and Disconnect - No access on Userdata (WEB user and modem users)
U2	Read only
U3-U5	Not in use

Lost login data ?
If you lost your login data, it is possible to delete the WEB user via Keypad and display (on-site at the device).
Therefore call the menu *Configration→Access codes→delete WEB-user* and answer all the questions with yes. Now all WEB users are deleted and an unchecked access is possible again.

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Login / Logout

As already mentioned we use the login mechanism of your browser.
A similar dialog should appear at which you have to enter your login data.

After successfully logging in the browser will store your login data during the current session to this device.
The logout will not be done until you close all browser-windows which are connected to the device.

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5.2 On-Site Configuration

5.2.1 Integrated Keypad

With the 6 integrated key of the keypad, you will be able to configure the device. Inside of the keypad there is a display with 2 rows á 16 columns integrated. With the "ESC"-key you can return to the main menu.

Taste	***Bezeichnung***	***Beschreibung***
⏎	ENTER	Change of menu and confirm of input.
⇦	LEFT	Go one menu-level back. Discarding input (Input will NOT be stored).
⇨	RIGHT	Call Submenu
⇧	UP	Selection of a menu item. Increase of a value.
⇩	DOWN	Selection of a menu item. Decrease of a value.
Esc	ESCAPE	Cancel of the currently executed function / Go one menu-level back. Cancel of the input (Input will not be stored).

In order to get from menu level to menu level, use the cursor-up or cursor-down keys. You can select a certain menu item by pressing ENTER or by using the cursor-right key. You are in a submenu now and can select a sub item in the same way (cursor-up/down) and then press ENTER or use the cursor-right key.
In case you have confirmed a menu item you do not want you can cancel this selection by pressing the cursor-left key. In case there have already been any modifications these are not saved then.
If you want to save a modification, just press ENTER.

If the tele-network device doesn't recognize the keyboard input, the following causes are possible:

At first, the communication between both modems is so bad, because the telephone-line is so bad, so the modems had to repeat more and more the same blocks of data, then there is not so much time to recognize the keyboard input. But when there is no problem with the telephone line more, the input of the keyboard is OK.

You have a connection with a tele-network device, which modem doesn't work correctly. So your modem tries to send the data blocks to the other modem, but there is

no response, and so it tries it the whole time. When you have this problem, your device has the same response as the first case. Remove the telephone plug from the device, so that the connection cuts off. When you have a lot of time, you can press the key codes and wait a long time, you can see under INFO-REMOTEVERSION, and there you see nothing, so you know, that the device of the other side doesn't work correctly.

You are at the PLC-TELE, and on the other side there is a force block or force variable, in progress you can't press any key, and the device does not the action you want. This is of secure purpose.

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5.2.2 Menutree

= Changeable via Keypad
= Changeable via Web Browser

messages
hang up

select subscrb.
Selection of one of the possible 197 subscriber entries and the dial to

edit subscriber
The edit of the 197 subscriber
Number of the entry Name max. 9 char Baudrate 12-33K
R12-R33K
M12-M33K
ISDN + RSDN
Number of the subscriber 16 chars, with "→" possible, the next 16 chars append to this entry
RRV-number (only with recall): intern. telefon number of the device, that want this recall

Connect to IP **(ONLY for PG-TELE)**
Here, you can make a connection to a in the IP-addressbook defined name with Ethernet.

IP addressbook
Here is like in a telephonebook the name and the ip-address for this name stored.
You can edit, delete and store.

Onlineaction
Hang up
Lift
Data mode
Voice mode
Init modem
Login remote **(ONLY for PG-TELE)**
Send Firmware
Fetch Firmware
Send OS
Fetch OS
Remoteconfig on **(ONLY for PG-TELE)**
Remoteconfig off **(ONLY for PLC-TELE)**

First Config
Language ...
Device Type ...
Telephone ...

Configuration
Device type
PLC-S5 TELE
PG-TELE
PLC-S5 KOR/MUX
PLC-S7 300/400
PLC-S7 200 9K6
PLC-S7 200 19K2
PLC-S5-F-TYPE
PLC-Pilz
PLC-Allen-Brad.

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Device name
max. 9 char
router-mode
Yes
No
MPI OnBoard
MPI OnBoard Y/N
Yes
No
MPI OnBoard Baud
9,6 kBit/s
19,2 kBit/s
45,45 kBit/s
93,75 kBit/s
187,5 kBit/s
500 kBit/s
750 kBit/s
1,5 MBit/s
3 Mbit/s
6 Mbit/s
12 Mbit/s
OnBoard MPI-Adr.
0 – 126
MPI OnBoard HSA
15
31
63
126
Fix OnBoard Baud
Yes
No
MPI/Profibus
MPI-Bus
Profi DP/Std.
Profi DP/FMS

PC/MPI-Cable
MPI-Cable Baud
19200
38400
57600
115200
Cable MPI-Adr.
0 – 31
Cable HSA
15
31
63
126

S7-Config **(ONLY for PLC-TELE)**
SPS-MPI-Address (is only valid, if there is no Poll-list active, for Pager, Fax- and SPS-TELE)
Poll-list (if there any entries exist, the S7-MPI-Adress is not valid)

Firewall
On
Off

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PG-MUX-Mode **(ONLY for PLC-S5-TELE)**
- PG-MUX
- PG-AG
- PG-MUX -c

IP-Addresses
- Ethernet-IP
  - xxx.xxx.xxx.xxx
- with Eth-Netmask
  - Yes
  - No
- Ethernet-Netmask
  - xxx.xxx.xxx.xxx
- ISDN IP-Address
  - xxx.xxx.xxx.xxx
- Analog IP-Addr.
  - xxx.xxx.xxx.xxx

Net-Config
- Hostname
  - Input for a logic hostname up to 16 char possible
- 1st DNS
  - xxx.xxx.xxx.xxx
- 2nd DNS
  - xxx.xxx.xxx.xxx
- 3rd DNS
  - xxx.xxx.xxx.xxx
- Std. Gateway
  - xxx.xxx.xxx.xxx or logic name
- list of hosts

Modem
- Extension
  - Yes
  - No
- Outline code
  - 0,1,2,3,4,5,6,7,8,9,!,“,“,/,>,#,X,W,*
- Count of Rings
  - 0,1,2,3,4,5
- Win2000-TAPI
  - Yes
  - No
- Analog
  - Analogmodem
    - German(Komplex)
    - USA(600R-System)
  - Dial mode
    - Tone
    - Pulse
  - Busy identify
    - Yes
    - No

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- Speaker
  - On
  - Off
- Hangup hearing
  - 0 – 10 Secs
- Baudrate manual
  - 12
  - 24
  - 48
  - 96
  - 33K
- Analog on ISDN
  - Yes
  - No
- ISDN aLaw/uLaw
  - aLaw EUR/Northam.
  - uLaw Southamerika

ISDN

- ISDN-Protocol
  - Euro-ISDN
  - 1TR6
- ISDN EAZ/MSN
  - 0 – 999

Extern

- external modem
  - Yes
  - No
- Baud ext. modem
  - 9K6 – 115K2
- ext. Modem cmd.
  - Yes
  - No

UMTS/GPRS

- UMTS-Modem
- Kind of net
  - only GPRS
  - only UMTS
  - 1.GPRS/2.UMTS
  - 1.UMTS/2.GPRS
- UMTS-PIN
  - Enter the UMTS-Pins (max. 8 char)
- No. SMS-Centre
- APN
  - PIN 6 chars

Connection

- Callback mode **(ONLY for PLC-TELE)**
  - Yes
  - No
- Callback no. **(ONLY for PG-TELE)**
  - Telephone number, max. 16 char
- Max. Connecttime
  - 0 up to 60 minutes
- Max. Idletime
  - 0 up to 60 minutes

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- Access code
  - dialin protect
    - Yes
    - No
  - PIN device local
    - 6 chars Pin
  - PIN plc local
    - 6 chars Pin
  - PIN device remote
    - 6 chars Pin
  - PIN plc local
    - 6 chars Pin
  - modem users
  - delete WEB-user

- Special
  - to PG/PLC COM **(ONLY for PG-TELE)**
    - Connect PG with PG (PG-socket of the PLC-Tele)
    - Connect PG with PLC (PLC-socket of the PLC-Tele's)
  - Break Tx-line **(ONLY for PG-TELE)**
    - 0 bis 30 s
  - S7-200 on **(ONLY for PG-TELE)**
  - Direct mode **(ONLY for PG-TELE)**
    - Source-COM
    - Dest-COM
    - DM on
    - DM on with Handshake
  - Tele-Switch **(ONLY for PG-TELE)**
  - PRO-TOOL 7/17 **(ONLY for PG-TELE)**
  - IBX-TEST **(ONLY for PLC-TELE)**
  - Reboot ProfII
  - Soft Restart

- Language
  - German
  - English

- Info
  - Version
  - OS Version
  - Remoteversion
  - Remotename
  - Serial number
  - MAC-Address
  - Copyright

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Options
- Pager-TELE
  - Pager Mode
    - Yes
    - No
  - Pager-Flag
    - Only even flag words, 0 to 254
  - Pager-COM-DB
    - DB1 to DB 255, DW 0 to 998
- PLC/ASCII-TELE
  - Modem control
    - No
    - With flag word
  - Modem Flag
    - Only even flag words, 0 to 254
  - PLC-TELE-Mode
    - Yes
    - No
  - PLC-TELE-Flag
    - Only even flag words, 0 to 254
  - PLC-TELE-KOM-DB
    - DB1 to DB 255, DW 0 to 998
  - ASCII-Mode
    - Yes
    - No
  - ASCII-Flag
    - Only even flag words, 0 to 254
  - ASCII-COM-DB
    - DB1 to DB 255, DW 0 to 998
- FAX-TELE
  - Fax-Mode
    - Yes
    - No
  - FAX-Flag
    - Only even flag words, 0 to 254
  - FAX-COM-DB
    - DB1 to DB 255, DW 0 to 998
  - Resolution
    - Fine
    - Heavy
  - FAX-POLL-DB
    - DB1 to DB 255, DW 0 to 998

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5.2.2.1 Menu item messages

In this menu item which occurs automatically on the display after starting the TELE-Network device, the user receives important data about the condition of his/her device. It is displayed whether the TELE-Network has a direct connection to the control:

- PLC ONLINE
- PLC OFFLINE

Moreover, after the first dialling, the user is informed whether there is a connection or not:

- connected
- not connected

5.2.2.2 Menu item Hang Up

With this menu item, the modem disconnects an existing connection, i.e. it hangs up.

5.2.2.3 Menu item Select Subscriber

Select one of the maximally 197 saved entries by using the cursor-up/down key. Then press ENTER for starting the actual dialling.
You can interrupt the dialling process by using the cursor-left key. This might become necessary if you accidentally dialled the wrong number.

5.2.2.4 Menu item Edit subscriber

This function enables you to input up to 197 names and telephone numbers in a telephone directory and save them there. You have the storage positions 1 to 197 at your disposal.

If you are in this menu item, you can select with the cursor keys UP/DOWN your desired storage position (1 to 197). Press ENTER and the cursor moves to the input position:

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Number of the entry	Subscriber name (max. 9 characters)	Max. baudrate, to begin the connection
Telefon number of the subcriber (max. 16 character, or with "□" select next entry, so you can use both entries and you have max. 31 characters)		

Schema of LCD-display for menu item Edit Subscriber

Possible baud rates:

12 – 33K (Standartanruf ohne Besonderheiten)
R12 – R33K (Connection with Recall, see chap. **Fehler! Verweisquelle konnte nicht gefunden werden.**)
M12 - M144 (call to a mailbox, no tele-network device, see chap. **Fehler! Verweisquelle konnte nicht gefunden werden.**)
ISDN connection with the ISDN-port
RSDN connection with Recall-mode with ISDN-port

If you have to edit a telefon number with more than 16 characters, you can do it with following way:

You edit, for example subscriber 8, edit the telefon number with 15 characters, then the special char "→", and edit in subscriber 9 the rest of this telefon number.

You can select letters, numbers or other adjustments by using the cursor keys UP/DOWN and the cursor position (if possible) by using the cursor keys RIGHT/LEFT.

If you have activated the return call function (Rxx Baud), you will then have the possibility to input the RC-PNr. (return call-prefix number).

If you have activated the modem call function, you had to configure the connected PC by the TELE-PROFessional-II at the V24-Connector with following options:

19200 Baud, 8 Data-Bit, 1 Stop-Bit, No Parity and RTS/CTS for handshakes

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5.2.2.5 Menu item online action

5.2.2.5.1 Hang up

With this menu item, the modem disconnects an existing connection, i.e. it hangs up.

5.2.2.5.2 Lift

With this menu item, the modem receives incoming calls. This is only the case if the adjustment “number of signals before picking up“ (which is explained further down) is turned to zero and if the modem does not pick up independently.

5.2.2.5.3 Data Mode

In case there is only one telephone line that should be used by a TELE-Network device and for the telephone communication with your co-worker, you can use this telephone line with this menu item for both ends.
The co-worker recognises after picking up a parallelly working telephone the signal of a calling TELE-Network device and can then connect the TELE-Network to the line with this menu item. The device disconnects the existing connection to the telephone, takes over the line and is then in data mode with the calling device. In case of speech mode, this menu item can be used as well in order to connect TELE-Network devices to the line. In this case, however, this function has to be carried out at both devices.

Only hang up the phone after the TELE-Network has displayed CONNECT. Do not hang up the phone if there should be a speech mode after the data mode.

Analogue: see voice mode

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5.2.2.5.4 Voice Mode

This is the contrasting command to the command “DATA MODE“. It disconnects an existing data connection and the speech connection is released again.

Do not hang up the phone while the data mode is in process.

Analogue: see data mode

5.2.2.5.5 Init Modem

With this command, modified initialisations are transferred to the modem.

5.2.2.5.6 Login Remote

With this action you can repeat the password input a second time, after you had logged in incorrectly.

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5.2.2.5.7 Transmit programme

This command is used to transmit newer software versions to TELE-Network devices with older versions. Your own programme is loaded to the other TELE-Network device via the telephone line to the programme memory.
In this way, all TELE-Network devices can be updated with the most recent software release.

Programmes can only be transmitted between device types that are configured differently. (PLC-TELE⇔PG-TELE or PG-TELE⇔PLC-TELE): If the devics are of the same type (PLC-TELE⇔PLC-TELE or PG-TELE⇔PG-TELE), there will be the error report "partner does not recognise option".
The TELE-Network device that has received the programme programmes itself after the transmission. While the programming is in process, do not disconnect the device from the voltage supply since then the complete programme becomes invalid. If the programme is invalid, the device reports an ERROR. If this message appears, the device has to send to your local distributor.
After the programming, the device executes a warm start and after that it reports with the new software release yet with the same configuration.

5.2.2.5.8 Fetch programme

This is the contrasting command to the command "Transmit programme". More recent software releases are loaded down from the TELE-Network devices. Here, the programme of another TELE-Network device is loaded to your own programme memory via the telephone line.
In this way, all TELE-Network devices are updated to the most recent software release.

Programmes can only be transmitted between device types that are configured differently. (PLC-TELE⇔PG-TELE or PG-TELE⇔PLC-TELE): If the devics are of the same type (PLC-TELE⇔PLC-TELE or PG-TELE⇔PG-TELE), there will be the error report "partner does not recognise option".
The TELE-Network device that has received the programme, programmes itself after the transmission. While the programming is in process, do not disconnect the device from the voltage supply since then the complete programme becomes invalid. If the programme is invalid, the device reports an ERROR. If this message appears, the device has to send to your local distributor.
After the programming, the device executes a warm start and after that it reports with the new software release yet with the same configuration.

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5.2.2.5.9 Send OS

This command is used to transmit newer OS versions to TELE-PROFessional-II devices with older versions. Your own OS is loaded to the other device via the telephone line to the programme memory.
In this way, all TELE-PROFessional-II devices can be updated with the most recent software release.

Programmes can only be transmitted between device types that are configured differently. (PLC-TELE⇔PG-TELE or PG-TELE⇔PLC-TELE): If the devics are of the same type (PLC-TELE⇔PLC-TELE or PG-TELE⇔PG-TELE), there will be the error report "partner does not recognise option".
The TELE-Network device that has received the programme, programmes itself after the transmission. While the programming is in process, do not disconnect the device from the voltage supply since then the complete programme becomes invalid. If the programme is invalid, the device reports an ERROR. If this message appears, the device has to send to your local distributor.
After the programming, the device executes a warm start and after that it reports with the new software release yet with the same configuration.

5.2.2.5.10 Fetch OS

This command is used to get newer OS versions to TELE-PROFessional-II devices with older versions. Your own OS is will be replaced from the other OS of the other device via the telephone line to the programme memory.
In this way, all TELE-PROFessioanl-II devices can be updated with the most recent software release.

Programmes can only be transmitted between device types that are configured differently. (PLC-TELE⇔PG-TELE or PG-TELE⇔PLC-TELE): If the devics are of the same type (PLC-TELE⇔PLC-TELE or PG-TELE⇔PG-TELE), there will be the error report "partner does not recognise option".
The TELE-Network device that has received the programme programmes itself after the transmission. While the programming is in process, do not disconnect the device from the voltage supply since then the complete programme becomes invalid. If the programme is invalid, the device reports an ERROR. If this message appears, the device has to send to your local distributor.
After the programming, the device executes a warm start and after that it reports with the new software release yet with the same configuration.

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5.2.2.5.11 Remote Config ON

With item you can activate the configuration of the remote device. If you had activated this item, and you change any parameter in the konfiguration, you change it in the remote device and not in this device you are in front of. This item is so long active, until you deactivate this item.

Be sure, that you switch off the remote configuration after ending of the edit, because when you mean, you are ready with the configuration, and you want to edit your own configuration, you overwrite the remote configuration, and so ist possible, you can´t get a connect after this operation. Before you start the remote configuration, you should have the same firmware in both devices. Please note, that the called device is a PLC-TELE, because this is only from PG-TELE to PLC-TELE possible.

5.2.2.5.12 Remote Config OFF

With this item, you can deactivate the configuration of the other device, the remoet device. After, you are ready for changing the data, go to this menu item, and after select this item, you are on your device, no longer the on other.

Be sure, that you switch off the remote configuration after ending of the edit, because when you mean, you are ready with the configuration, and you want to edit your own configuration, you overwrite the remote configuration, and so ist possible, you can´t get a connect after this operation. Before you start the remote configuration, you should have the same firmware in both devices. Please note, that the called device is a PLC-TELE, because this is only from PG-TELE to PLC-TELE possible.

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5.2.2.6 Menu item First config

With this menu item it is possible to configure the most important parameter, so that the device is ready for action expressly.
With the cursor keys UP/DOWN you can browse through the menutree. With ENTER you can select the corresponding menu item. With the cursor keys UP/DOWN you can change the setting. By pressing ENTER-key again the selected value will be receipted and stored.

5.2.2.6.1 Menu item LANGUAGE

- German — menu drive in German
- English — menu drive in English

5.2.2.6.2 Menu item DEVICE TYPE

- PLC-S5-TELE — The device is next to the plc-control and is connected to it
- PG-TELE — The device is next to the programming device and is connected to it
- PLC-S5 KOR/MUX — The device is not connected directly to the plc but via a SIEMENS Multiplexer (PG-BUS-dialling), via a coordinator (e.g. 923 C) or via the IBX-Bus (Bus system of PI with PG-BUS-dialling); (special type of PLC-TELE).

The built-in Multiplexer is not active in this operation mode!

- PLC-S7 300/400 — This device is connected to a S7-300/400 PLC
- PLC-S7 200 9K6 — This device is connected to a S7-200 plc and communicates with 9600 Baud on port PLC-V24
- PLC-S7 200 19K2 — This device is connected to a S7-200 plc and communicates with 19200 Baud on port PLC-V24
- PLC-S5-F-Type — This device is connected to S5 plc, especially a F-Type
- PLC-PILZ — This device is connected to PILZ PSSxxx plc, you should connect the PLC with its own programming cable.
- PLC-Allen-Bradley — This device is connected to a Allen-Bradley SLC5 plc and communicates with the DH485 or DF-1 mode.

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5.2.2.6.3 Menu item MPI OnBoard Y/N

- Yes — The build in mpi/profibus-connector is activated and be used.
- No — The build in mpi/profibus-connector is deactivated.

5.2.2.6.4 Menu item MPI OnBoard Baud

With this menu item, you can define the speed of the connected mpi/profibus. Please check this baudrate because so there is no communication possible or your bus system will be stopped.

5.2.2.6.5 Menu item OnBoard MPI-Adr

With this menu item you define the address of the TELE-PROFessional-II as a bus client. This address must be a unused address for the bus. If you use the default address “0”, be sure that no PG with this address will be in the bus, too.
If you start a connection from the office to the plc, the devices uses the address, you configured in your programming software. If your tele-service is ready, the device uses the configured address.

5.2.2.6.6 Menu item MPI OnBoard HSA

With this menu item, you configure the HSA (**h**ighest **s**tation **a**ddress) of the connected bus. Please note that a too big HSA will slow down the speed of communication to the bus. So, in your software, there will be the baudrate for the bus system configured. Have you configured the “fis baudrate” to No, so, the baudrate from the programming software is be used. If you’re a beginning to programm a plc it is better for you, because so you are able to change the baudrate as you like.
Have you configured this item to “Yes”, the device uses the configured baudrate of the TELE-PROFessional-II and ignors the baudrate from the software.

5.2.2.6.7 Menu item Fix OnBoard Baud

While you have tele-service to a plc, the PLC-Tele is for your software a PC/MPI-adapter. So, in this driver you can configure the baudrate of your bus system. Have you configured the “fix baudrate” to “No”, the device gets the baudrate from your software and will use it. This is an advantage for you, so you can change the baudrate from the office you want, and no one must chage the configuration of the plc.
If you have configured it to “Yes”, the TELE-PROFessional-II will use the baudrate of its own configuration. The advantage for this is, that you can’t define a baudrate greater than 1.5 MBaud in the programming software. So, you are connected to bus systems with baudrates 6 MBaud or 12MBaud and so, you can tele-service these bus systems. The baudrate is fixed.

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5.2.2.6.8 Menu item MPI/Profibus

- MPI-Bus — The connected bus-system is a MPI-bus
- Profi DP/Stand. — The connected bus-system is a profibus with the profile DP/Standard
- Profi DP/FMS — The connected bus-system is a profibus with the profile DP/FMS

5.2.2.6.9 Menu item MPI cable Baud

The in this menu item configured baudrate is the baudrate the connected PC communicates with the PG-TELE. The siemens software only provides baudrate up to 38400, so you can use a tool called “mpi-speed” to setup the baudrate up to 115200 Baud. This baudrate you have to configure in your PG-TELE, too.

5.2.2.6.10 Menu item ISDN EAZ/MSN

The so called EAZ/MSN is the device number of the TELE-PROFessional-II on this telephone plug. For the ISDN-S0-bus, every client must have this address, he will be recognized through this number. So, the TELE-PROFessional-II knows, that he will be meant and it will take the call. Often, the number of the telephone plug is also this number. Please contact your supervisor of the telephone system, to get this information. So, he can also change the ISDN-property to modem, this will be needed for this telephone plug.

A special part is the system of Siemens, called HICOM. With a “optiset E ISDN adapter” you don´t need a MSN/EAZ number. If you have defined one, the device doesn’t work with this system.

5.2.2.6.11 Menu item Ethernet-IP

If you want to use the TELE-PROFessional-II in your company network, you should configure a IP-address in this device. This IP-address is divided into 4 blocks, so you have to configure this address like 192.168.1.100. Between these 4 blocks you can change with → and ←. The input will be finished with the ENTER-key.

After RFC1918 free IP-addresses:

10.0.0.0	-	10.255.255.255
172.16.0.0	-	172.31.255.255
192.168.0.0	-	192.168.255.255

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5.2.2.6.12 Menu item ISDN-IP

The communication between each device is a ppp-protocoll, so every device need a different ip-address. As you can connect with ISDN or analogue, so you need 2 different ip-addresses. So, every PG-TELE needs another address like the PLC-TELE. While, you don't need a communication between PLC-TELE and other PLC-Tele (PLC-TELE-option), the addresses can be the same. Please configure this address like 176.16.1.1. This address is also divided in 4 blocks. Between these 4 blocks you can change with → and ←. The input will be finished with the ENTER-key.

Please change only this IP-address for your PG-TELE, because all other delivered devices has the same address. So you don't have to make any thought about this menu item.

5.2.2.6.13 Menu item Analog IP-Adr.

The communication between each device is a ppp-protocoll, so every device needs a different ip-address. As you can connect with ISDN or analogue, so you need 2 different ip-addresses. So, every PG-TELE needs another address like the PLC-TELE. While, you don't need a communication between PLC-TELE and other PLC-Tele (PLC-TELE-option), the addresses can be the same. Please configure this address like 172.16.1.2. This address is also divided in 4 blocks. Between these 4 blocks you can change with → and ← . The input will be finished with the ENTER-key.
Diese IP-Adresse wird in 4 Blöcke aufgeteilt. Bitte geben Sie diese Adresse zum Beispiel 176.16.1.1 ein. Zwischen den Blöcken können Sie mit → und ← wechseln. Die Eingabe wird mit der Enter-Taste angeschlossen.

Please change only this IP-address for your PG-TELE, because all other delivered devices have the same address. So you don't have to make any thought about this menu item.

5.2.2.6.14 Menuitem analogue modem

- German(complex) The connected telephone system is complexed.
- USA(600R) The connected telephone system is 600R. With this selection you should work in the USA and the other world, but not in Europe.

If the modem picks up but the modem noise is not hearable then you should change the modem type!

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5.2.2.6.15 Menu item Dialmode

- Tone: The modem dials with the modern MFV-system. That means you hear while dialing a little melody.
- Pulse: The modem dials with pulses. That means you hear while dialing the noise of a relais.

5.2.2.6.16 Menu item Extension mode

- YES The device is not connected directly to the line. You then need either a prefix number or a certain key combination to get to the line.
- NO The device is either connected directly to the line, i.e. you do not need a prefix number in order to get a line or the device is within a private branch exchange and should call a partner within this system.

5.2.2.6.17 Menuitem Outline Code

With these possible figures you can config the device to get a telefon line:
0,1,2,3,4,5,6,7,8,9,!,“,“,/,>,#,X,W,*

5.2.2.6.18 Menuitem Rings before Lifting

- = 0
  With this adjustment, the modem does not pick up independently. With the menu item “pick up“ you have to make the modem pick up manually.
- = 1-5
  Modem picks up after the adjusted number of rings.

The operation of these remote maintenance units is only allowed if a supervising person is present who can intervene in the installation at any time. Please do not intervene in running programmes without visual communication or control.
Before installing the TELE-LINK-Network devices, please connect them by all means with earthing PE at the casing or at the screw terminal!
Please read the user´s manual closely before installing the device. There is no responsibility taken for damage due to incorrect connection or handling.

5.2.2.7 Menuitem Configuration

With this option, you can configure the TELE-PROFessional-II in its ground configuration. For further informationen please read chapter 6.2 *Konfiguration*.

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5.2.2.8 Menu item Options

5.2.2.8.1 Pager-TELE

5.2.2.8.1.1 PAGER operation

With this menu item, you can turn the PAGER-TELE operation on or off.

5.2.2.8.1.2 PAGER flag

With this menu item, you can input the common flag word for the data communication.

Use even numbers only (e.g. FW 122)! Only 0 to 254.

5.2.2.8.1.3 PAGER-COM-DB

With this menu item, you can set the communication data base (DB) in order to set parameter values to the data flow and source at the PAGER-operation.

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5.2.2.8.2 PLC/ASCII-TELE

This menu item is only activated if the TELE-Network device has a plc-option or an ASCII-option.

5.2.2.8.2.1 Modem Control

In this menu item, you can adjust how the communication between the plc and the modem is carried out:

NO:	plc does not have the possibility to control the modem
with flag word:	PLC-TELE-LINK and plc have a common flag word for controlling
with digital I/O:	PLC-TELE-LINK and plc communicated via the digital I/O-level

5.2.2.8.2.2 Modem flag

In case you selected “with FW“ (with flag word) in the menu item “modem control“, you can now enter the common flag word for the modem control.

Use even numbers only (e.g. FW 120)! Only 0 to 254.

.

5.2.2.8.2.3 SPS-TELE operation

With this menu item, you can turn the PLC-TELE operation on or off.

5.2.2.8.2.4 SPS-TELE flag

With this menu item, you can input the common flag word for the data communication.

Use even numbers only (e.g. FW 122)! Only 0 to 254.

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5.2.2.8.2.5 SPS-TELE-COM-DB

With this menu item, you can set the communication data base (DB) in order to set parameter values to the data flow, source, and target at the PLC-TELE operation.

DB1 to 255, DW 0 to 998.

5.2.2.8.2.6 ASCII operation

With this menu item, you can turn the ASCII-TELE operation on or off.

5.2.2.8.2.7 ASCII flag

With this menu item, you can set the common flag word for the data communication.

Use even numbers only (e.g. FW 122)! Only 0 to 254.

5.2.2.8.2.8 ASCII-COM-DB

With this menu item, you can set the communication data base (DB) in order to set parameter values to the data flow, source, and target at the ASCII-TELE operation.

DB1 to 255, DW 0 to 998.

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5.2.2.8.3 FAX-TELE

This menu item is only activated if the TELE-Network device has a FAX-option.

5.2.2.8.3.1 FAX-TELE operation

With this menu item, you can turn the FAX-TELE operation on or off.

5.2.2.8.3.2 FAX-TELE flag

With this menu item, you can input the common flag word for the data communication.

Use even numbers only (e.g. FW 122)! Only 0 to 254.

5.2.2.8.3.3 FAX-TELE-COM-DB

With this menu item, you can set the communication data base (DB) in order to set parameter values to the data flow and source at the PLC-TELE operation.

DB 1 to 255, DW 0 to 998.

5.2.2.8.3.4 Resolution

With this menu item, you can select the resolution of the fax transmit. Possible parameters are:

- heavy
- fine

5.2.2.8.3.5 FAX-POLL-DB

In this menu item you define the communication-DB for polling. It has the same building like the FAX-KOM-DB. But it is only activ, when the TELE-LINK-Network device gets a fax call with a blank paper.
So you call the TELE-LINK-Network-device with your fax, send him a blank page, and the device will call back your transmitted fax number with the data configured in the FAX-POLL-DB.

DB 1 to 255, DW 0 to 998.

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5.2.2.9 Menu item Special

5.2.2.9.1 To PG/PLC interface?

In this menu item it is decided at the PG-TELE whether the communication at the PLC-TELE is made via the PLC or via the PG-socket.
Normally, the PG-TELE communicates with the plc via the PLC-TELE and the PLC-socket. If there is for example a 2nd plc connected to the PLC-TELE at the PG-socket, then the PG-TELE can communicate with the plc at the PG socket of the PLC-TELE with this adjustment.

This menu item is also valid for the H1, L1 and L2 communication if these software options are released. In this case, the CP is connected to the PG-socket of the PLC-TELE.

The following adjustments are possible:

- Connect PG-socket with PLC-socket — normal setting
- Connect PG-socket with PG-socket — 2nd plc or switch to CP connection

5.2.2.9.2 Break Tx-line

This menu item is valid for example for turning on the H1. In case the connected CP does not react anymore to the communication, a break with adjustable duration can be sent to the CP. (Duration in seconds, 0 to 30)

5.2.2.9.3 Direkt-Mode

You can select this mode in order to realise a data transmission that does not correspond to a communication protocol specific for controls as for example the AS511-protocol of Siemens-plcs.

For further Information please read chapter 7.5 *Serial Extension (Direct-Mode)*.

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5.2.2.9.4 Tele-Switch

With this option, you can configure the tele-switch device for the Tele-Network-devices. The TELE-SWITCH can be operated at the PLC-or PG-socket of a TELE-Network device that is configured as PLC-TELE.

In the PG-TELE, the following adjustments have to be made for calling a channel:

1st line: TELE-SWITCH	
2nd line: xx to ChaNr: yy	xx = PG or PLC (with UP/DOWN key)
	yy = Channel 00 (fed-through mode finished)
	yy = Channel 01 to 16 (call corresponding slave number)

After this input, the question “Switch? YES/NO“ is displayed:

- YES Input is taken over, channel is called
- NO Input is dismissed, present condition remains

If there is a call, then it is reported whether the call or the transformation respectively were successful or not. After connection clear-down, the SWITCH is automatically deactivated.

5.2.2.9.5 IBX-Test (Only for PLC-S5 KOR/MUX)

If you have selected the device type KOR/MUX-TELE, you have now the possibility, to test the connected pg-bus. First you select Test IBX: xx; xx stands for the pg-bus-number 1 to 31. The tele tells you, if the selected slave is connected. Automatic the tele tries to connect the plc and gives you an OK if the Connection is good, or gives you the message, where the failure is.

5.2.2.9.6 Restart Prof-II

With this menu item you can reset the TELE-PROFessional-II. If you have an active telephone call, and you should reset the device on the other side, you activate the remote configuration and select this item. So, then the telephone line will be broken, but this is for a reset, normal. With this reset, the remote configuration will be also off.

5.2.2.10 Language

By using the UP/DOWN key, you can select between German and English menu drive.

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5.2.2.11 Info

5.2.2.11.1 Version

This menu item informs you about the software release of your TELE-Network device.

5.2.2.11.2 Remoteversion

This menu item informs you about software release of the called TELE-Network device. If there is a more recent or older release, a software update can be made. (see chapter 5.2.2.5.7 and **Fehler! Verweisquelle konnte nicht gefunden werden.**).

5.2.2.11.3 Remotename

In this menu item, the device name of the called device is displayed. In this way, can check with which installation a connection has been built up. This only works on the condition that the called device has a device name. (see chapter 6.2.2 ***Fehler! Verweisquelle konnte nicht gefunden werden.***).

5.2.2.11.4 Serial number

With menu item, you can check the serial number of the TELE-PROFessional. Normal, this number is on the back side of the device, and so, you don't need to build out the device to get this information.

5.2.2.11.5 MAC address

Here, you can see the internal MAC address of the TELE-PROFessional. This is an information you can use if you are looking for a problem in our network system.

5.2.2.11.6 Copyright

Copyrights of the TELE-Network devices:

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5.3 Status with LED

The device can display the status of it with 5 LED. They have folowing meaning:

```
          Connect  O
  (analog or ISDN)
      PLC/SPS Data  O   O  Error

        Modem Data  O   O  LAN
```

With the Connect-LED the user knows, if there is an active telephone connection, wether analogue or digital.

The PLC/SPS-Data-LED signs the user that data will be transferred to or from the connected PLC. This LED is only flushing while data will be transferred.

If there will be transferred data from device to device with modem, this Modem-Data-LED will be flushed.

If there is any error inside of the device, or a error with the communication, the Erroe-LED is on. For further information look at the display.

If you have connected the device to the ethernet, this LED will be ON. If you have connected the device to the Ethernet, and the LED is OFF, you should proof the connection or the cable. While you send data with Ethernet, the LED will be flushed.

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6 Implementing

6.1 Quick Configuration / Quick Entrance

After mounting the device into the switchboard, or placing on the table, at first you have to connect the ground connector on the right side of the device with the ground pin of the switchboard. Then you connect of the backside of the device the telefon lead into the correct connector and then connect the power 24V with the green connector on the front side. After the device is booting, you can read in the display „not connected“, so you can begin with the first configuration.
In order to configure the TELE-Network devices quickly and safely, there is a special menu item in the menu tree (see chapter 5.2.2 *Menutree*). This menu item is called “First config“ and its menu structure is shown in the following:

Language:	German	
	English	
Device type:	PLC-S5-TELE	(standard S5)
	PG-TELE	(office device)
	PLC-S5-KOR/MUX	
	PLC-S7 300/400	(standard S7-300/400)
	PLC-S7 200 9k6	
	PLC-S7 200 19K2	
	PLC-S5-F-TYPE	
	PLC-Pilz	(standard for PILZ-plc)
	PLC-Allen-Bradley	(standard for AB-plc)
MPI OnBoard Y/N	Yes	(default)
	No	
MPI OnBoard Baud	9,6 kBit/s	
	19,2 kBit/s	
	45,45 kBit/s	
	93,75 kBit/s	
	187,5 kBit/s	(Default)
	500 kBit/s	
	750 kBit/s	
	1,5 MBit/s	
	3 Mbit/s	
	6 Mbit/s	
	12 Mbit/s	
OnBoard MPI-Adr	000	(default)
MPI OnBoard HSA	15	
	31	(default)
	63	
	126	
Fix OnBoard Baud	Yes	
	No	(default)

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MPI/Profibus	MPI-Bus	(default)
	Profi DP/Std.	
	Profi DP/FMS	
MPI-cable Baud	19200	(default)
	38400	
	57600	
	115200	
ISDN EAZ/MSN	0-9999999	
Ethernet-IP	xxx.xxx.xxx.xxx	
ISDN IP-Adresse	xxx.xxx.xxx.xxx	
Analog IP-Adr.	xxx.xxx.xxx.xxx	
Analoguemodem	German(complex)	(default)
	USA(600R-system)	
Dialmode	Tone	(default)
	Pulse	
Extension-Mode	Yes	
	No	(default)
Outline-Code	“ “,0,1,2,3,4,5,6,7,8,9,!,“,“,/,>,#,X,W,*,→	
Count of rings	0,1,2,3,4,5	

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With the UP or DOWN keys, you can go through the menu tree. Press ENTER in order to select a menu item. Now use the cursor-up or cursor-down key again to select your next adjustment. Press ENTER to save it.

Menu item LANGUAGE:

- German menu drive in German
- English menu drive in English

Menu item DEVICE TYPE:

- PLC-S5-TELE The device is next to the plc-control and is connected to it
- PG-TELE The device is next to the programming device and is connected to it
- PLC-S5 KOR/MUX The device is not connected directly to the plc but via a SIEMENS Multiplexer (PG-BUS-dialling), via a coordinator (e.g. 923 C) or via the IBX-Bus (Bus system of PI with PG-BUS-dialling); (special type of PLC-TELE).

The built-in Multiplexer is not active in this operation mode!

- PLC-S7 300/400 This device is connected to a S7-300/400 plc
- PLC-S7 200 9K6 This device is connected to a S7-200 plc and communicates with 9600 Baud on port PLC-V24
- PLC-S7 200 19K2 This device is connected to a S7-200 plc and communicates with 19200 baud on port PLC-V24
- PLC-S5-F-Type This device is connected to S5 plc, especially a F-Type
- PLC-PILZ This device is connected to PILZ PSSxxx plc, you should connect the plc with its own programming cable.
- PLC-Allen-Bradley This device is connected to a Allen-Bradley SLC5 plc and communicates with the DH485 or DF-1 mode.

Menuitem MPI OnBoard Y/N:

- Yes The build in mpi/profibus-connector is activated and be used.
- No The build in mpi/profibus-connector is deactivated.

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Menuitem MPI OnBoard Baud:
With this menu item, you can define the speed of the connected mpi/profibus. Please check this baudrate because so there is no communication possible or your bus system will be stopped.

Menuitem OnBoard MPI-Adr:
With this menu item you define the address of the TELE-PROFessional-II as a bus client. This address must be a unused address for the bus. If you use the default address “0”, be shure, that no PG with this address will be in the bus, too.
If you start a connection from the office to the plc, the devices uses the address, you configured in your programming software. If your tele-service is ready, the device uses the configured address.

Menuitem MPI OnBoard HSA:
With this menu item, you configure the HSA (**h**ighest **s**tation **a**ddress) of the connected bus. Please note, that a to big HSA will slow down the speed of communication to the bus. So, in your software, there will be the baudrate for the bus system configured. Have you configured the “fis baudrate” to No, so, the baudrate from the programming software is be used. If you’re a beginning to programm a plc it is better for you, because so you are able to change the baudrate as you like.
Have you configured this item to “Yes”, the device uses the configured baudrate of the TELE-PROFessional-II and ignors the baudrate from the software.

Menuitem Fix OnBoard Baud:
While you have tele-service to a plc, the PLC-Tele is for your software a PC/MPI-adapter. So, in this driver you can configure the baudrate of your bus system. Have you configured the “fix baudrate” to “No”, the device gets the baudrate from your software and will use it. This is an advantage for you, so you can change the baudrate from the office you want, and no one must chage the configuration of the plc.
If you have configured it to “Yes”, the TELE-PROFessional-II will use the baudrate of its own configuration. The advantage for this is, that you can’t define a baudrate greater than 1.5 MBaud in the programming software. So, you are connected to bus systems with baudrates 6 MBaud or 12MBaud and so, you can tele-service this bus systems. The baudrate is fixed.

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Menuitem MPI/Profibus:

- MPI-Bus — The connected bus-system is a MPI-bus
- Profi DP/Stand. — The connected bus-system is a profibus with the profil DP/Standard
- Profi DP/FMS — The connected bus-system is a profibus with the profil DP/FMS

Menuitem MPI-Kabel Baud:
The in this menu item configured baudrate is the baudrate the connected PC communicates with the PG-TELE. The siemens software only provides baudrate up to 38400, so you can use a tool called “mpi-speed” to setup the baudrate up to 115200 Baud. This baudrate you have to configure in your PG-TELE, too.

Menuitem ISDN EAZ/MSN
The so called EAZ/MSN is the device number of the TELE-PROFessional-II on this telephone plug. For the ISDN-S0-bus, every client must have this address, he will be recognized through this number. So, the TELE-PROFessional-II knows, that he will be meant and it will take the call. Often, the number of the telephone plug is also this number. Please contact your supervisor of the telephone system, to get this information. So, he can also change the ISDN-property to modem, this will be needed for this telephone plug.

A special part is the system of Siemens, called HICOM. With a “optiset E ISDN adapter” you don´t need a MSN/EAZ number. If you have defined one, the device doesn’t work with this system.

Menuitem Ethernet-IP:
If you want to use the TELE-PROFessional-II in your company network, you should configure a IP-address in this device. This IP-address is divided into 4 blocks, so you have to configure this address like 192.168.1.100. Between these 4 blocks you can change with $\rightarrow$ and $\leftarrow$. The input will be finished with the ENTER-key.

After RFC1918 free IP-addresses:

10.0.0.0	-	10.255.255.255
172.16.0.0	-	172.31.255.255
192.168.0.0	-	192.168.255.255

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Menuitem ISDN-IP:
The communication between each device is a ppp-protocoll, so every device need a different ip-address. As you can connect with ISDN or analogue, so you need 2 different ip-addresses. So, every PG-TELE needs another address like the PLC-TELE. While, you don't need a communication between PLC-TELE and other PLC-Tele (PLC-TELE-option), the addresses can be the same. Please configure this address like 172.16.1.1.
This address is also divided in 4 blocks. Between these 4 blocks you can change with → and ← . The input will be finished with the ENTER-key.

Please change only this IP-address for your PG-TELE, because all other delivered devices has the same address. So you don't have to make any thought about this menu item.

Menuitem Analog IP-Adr.:
The communication between each device is a ppp-protocoll, so every device need a different ip-address. As you can connect with ISDN or analogue, so you need 2 different ip-addresses. So, every PG-TELE needs another address like the PLC-TELE. While, you don't need a communication between PLC-TELE and other PLC-Tele (PLC-TELE-option), the addresses can be the same. Please configure this address like 172.16.1.2.
This address is also divided in 4 blocks. Between these 4 blocks you can change with → and ← . The input will be finished with the ENTER-key.

Please change only this IP-address for your PG-TELE, because all other delivered devices has the same address. So you don't have to make any thought about this menu item.

Menuitem analogue modem:

- German(complex) The connected telephone system is complexed.
- USA(600R) The connected telephone system is 600R. With this selection you should work in the USA and the other world, but not in Europe.

If the modem picks up but the modem noise is not hearable then you should change the modem type!

Menuitem Dialmode:

- Tone: The modem dials with the modern MFV-system, this means you hear while dialing a little melody.
- Pulse: The modem dials with pulses, that means you hear while dialing the noise of a relais.

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Menuitem Extension mode:

- YES — The device is not connected directly to the line. You then need either a prefix number or a certain key combination to get to the line.
- NO — The device is either connected directly to the line, i.e. you do not need a prefix number in order to get a line or the device is within a private branch exchange and should call a partner within this system.

Menuitem Outline Code:
With these possible figures you can config the device to get a telefon line:
0,1,2,3,4,5,6,7,8,9,!,“,“,/,>,#,X,W,*

Menuitem Rings before Lifting:

- = 0
  With this adjustment, the modem does not pick up independently. With the menu item “pick up“ you have tomake the modem pick up manually.
- = 1-5
  Modem picks up after the adjusted number of rings.

The operation of these remote maintenance units is only allowed if a supervising person is present who can intervene in the installation at any time. Please do not intervene in running programmes without visual communication or control.
Before installing the TELE-LINK-Network devices, please connect them by all means with earthing PE at the casing or at the screw terminal!
Please read the user´s manual closely before installing the device. There is no responsibility taken for damage due to incorrect connection or handling.

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6.2 Konfiguration

6.2.1 Device Type

With this option, you can configure the TELE-PROFessional-II in its ground configuration. This configuration has following items:

- PLC-S5-TELE — The device is next to the plc-control and is connected to it
- PG-TELE — The device is next to the programming device and is connected to it
- PLC-S5 KOR/MUX — The device is not connected directly to the plc but via a SIEMENS MUX757 (PG-BUS-dialling), via a coordinator (e.g. 923 C) or via the IBX-Bus (Bus system of PI with PG-BUS-dialling); (special type of PLC-TELE).

The built-in Multiplexer is not active in this operation mode!

- PLC-S7 300/400 — This device is connected to a S7-300/400 plc
- PLC-S7 200 9K6 — This device is connected to a S7-200 plc and communicates with 9600 Baud on port PLC-V24
- PLC-S7 200 19K2 — This device is connected to a S7-200 plc and communicates with 19200 baud on port PLC-V24
- PLC-S5-F-Type — This device is connected to S5 plc, especially a F-Type
- PLC-PILZ — This device is connected to PILZ PSSxxx plc, you should connect the plc with its own programming cable.
- PLC-Allen-Bradley — This device is connected to a Allen-Bradley SLC5 plc and communicates with the DH485 or DF-1 mode.

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6.2.2 Device name

If you input the a device name as for example the installation name, number or place, the usage of several TELE-Network devices and their management is made easier. The device name can be asked for with the option “remote name“ and it can be shown on the display.
By pressing the UP/DOWN keys, numbers and letters can be edited and the position of the cursor can be changed by using the LEFT/RIGHT key. Press ENTER in order to finish and save the input of the device name (max. 9 chars).

6.2.3 Router Mode

If you activate this menu item, you cannuse the TELE-PROFessional-II as a “router” for our network. In both devices this option must be activated. The IP-address of the PG-Tele is the gateway address of the connected PC, the IP-address of the PLC-TELE the gateway address of all clients on this network. The IP-address of the office side must be not the same range of the plc side.

IP office side: 192.168.004.xxx
IP plc side: 192.168.001.xxx

6.2.4 MPI OnBoard

6.2.4.1 MPI OnBoard Y/N

Here you can activate the build in MPI/Profibus-connector. In the following items, you can configure this connector.

6.2.4.2 MPI OnBoard Baud

With this menu item, you can define the speed of the connected mpi/profibus. Please check this baudrate because so there is no communication possible or your bus system will be stopped.

6.2.4.3 OnBoard MPI-Adr.

With this menu item you define the address of the TELE-PROFessional-II as a bus client. This address must be a unused address for the bus. If you use the default address “0”, be shure, that no PG with this address will be in the bus, too.
If you start a connection from the office to the plc, the devices uses the address, you configured in your programming software. If your tele-service is ready, the device uses the configured address.
Possible addresses are from 0 up to 126.

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6.2.4.4 MPI OnBoard HSA

With this menu item, you configure the HSA (highest station address) of the connected bus. Please note, that a to big HSA will slow down the speed of communication to the bus. So, in your software, there will be the baudrate for the bus system configured. Have you configured the “fis baudrate” to No, so, the baudrate from the programming software is be used. If you’re a beginning to programm a plc it is better for you, because so you are able to change the baudrate as you like.
Have you configured this item to “Yes”, the device uses the configured baudrate of the TELE-PROFessional-II and ignors the baudrate from the software.
Possible Values: 15, 31, 63 und 126

6.2.4.5 Fix OnBoard Baud

While you have tele-service to a plc, the PLC-Tele is for your software a PC/MPI-adapter. So, in this driver you can configure the baudrate of your bus system. Have you configured the “fix baudrate” to “No”, the device gets the baudrate from your software and will use it. This is an advantage for you, so you can change the baudrate from the office you want, and no one must chage the configuration of the plc.
If you have configured it to “Yes”, the TELE-PROFessional-II will use the baudrate of its own configuration. The advantage for this is, that you can’t define a baudrate greater than 1.5 MBaud in the programming software. So, you are connected to bus systems with baudrates 6 MBaud or 12MBaud and so, you can tele-service this bus systems. The baudrate is fixed.

6.2.4.6 MPI/Profibus

With this menu itm, you define the profile of the connected mpi/profibus. Please note, that you configure the correct profile for the connected bus system, because the timing will be changed, not, that your bus system will be paused if you uses the wrong profile.

MPI-Bus	The connected bus-system is a MPI-bus
Profi DP/Stand.	The connected bus-system is a profibus with the profil DP/Standard
Profi DP/FMS	The connected bus-system is a profibus with the profil DP/FMS

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6.2.5 PC/MPI-cable

6.2.5.1 MPI cable Baud

The in this menu item configured baudrate is the baudrate the connected PC communicates with the PG-TELE. The siemens software only provides baudrate up to 38400, so you can use a tool called “mpi-speed” to setup the baudrate up to 115200 Baud. This baudrate you have to configure in your PG-TELE, too.
More information to this software you will found under
www.tpa-partner.de/mpivers.htm

When using the device as PLC-TELE and connecting a serial<>mpi-converter to the PLC/V.24 connector of it the device should know at which baudrate the converter is responsive.

6.2.5.2 MPI cable Adr.

If your buildin mpi/profibus-port is not used or you want to connect an 2nd bus system, the device need a own address like every other client in the system. You should proof, that you use a address no one other used it.
Possible Values: 0 up to 31.

6.2.5.3 Cable HSA

When you are using a serial<>mpi-converter like a MPI/PPI-cable, the device should know the correct HSA. So, you define it with this menu item. So, with the TELE-PROFessional-II you are able to communicate with 2 bus systems. You make the choice, which system you want to connect it.
Possible Values: 15, 31, 63 und 126.

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6.2.6 S7-Config (ONLY for PLC-TELE)

6.2.6.1 PLC MPI address

Here is write down the mpi-adress for the plc, which you need for following options:

- Pager-Option
- Fax-Option
- SPS-Option

If you haven't configured an mpi-adress, the device doesn't know which plc gives him the order to dial, to send a fax. If you have configured the S7-poll-list, so this entry is not active.

6.2.6.2 Poll list

If you have more than one plc´s, which have order to fax, send sms for the tele-network device, so you can edit this list with the adresses of this plc´s. This list is be reed for following options:

- Pager
- Fax
- SPS/ASCII-TELE

If you edit only a „0" in this list, so the device uses only the PLC MPI address-entry.

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6.2.7 PG-MUX-Mode (Only for PLC-TELE and S5)

With this menu item, you can use the Multiplexer that is integrated in the TELE-Network device. For the operation with the Mulitplexer, there are the following adjustments:

- PG-MUX Multiplexer between telefone line and the PG-Port is active (standard). When you have a telefone connection there will be possible to communicate to the plc via telephone and directly on the PLC-TELE.
- PG <-> AG The PG-Port of the PLC-TELE is connected to the PLC-Port, the integrated multiplexer is off. The data from the PG-Port will be transferred directly and **without** time controll to the PLC-Port. After a telephone connect this communication will be broken, so the communication above telephone line can use maximum speed and performance. After hang up the line the PG-Port top PLC-Port communication will be driven, again.
- PG-MUX-C The PG-Port of the PLC-TELE is connected to the PLC-Port, the integrated multiplexer is off. The data from the PG-Port will be transferred directly and **with** time controll to the PLC-Port. After a telephone connect this communication will be broken, so the communication above telephone line can use maximum speed and performance. After hang up the line the PG-Port top PLC-Port communication will be driven, again.

This mode is **only** for **S5-Mode** of the Tele-Network-Device in use.

6.2.8 IP Address

6.2.8.1 Ethernet-IP

If you want to use the TELE-PROFessional-II in your company network, you should configure a IP-address in this device. This IP-address is divided into 4 blocks, so you have to configure this address like 148.149.1.100. Between these 4 blocks you can change with $\rightarrow$ and $\leftarrow$. The input will be finished with the ENTER-key.
The default IP-address of this device is 192.168.1.54.

According to RFC1918 free IP-addresses:

10.0.0.0	-	10.255.255.255
172.16.0.0	-	172.31.255.255
192.168.0.0	-	192.168.255.255

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6.2.8.2 mit Eth-Netmask

Here you can configure, if you want to work for the IP-communiccation with a subnet-mask. If you want, you should select a correct subnet-mask for your system, because wrong subnet-mask may cause problems in the communication.
Possible Values: Yes and No

If you choose NO the Subnetmask will be automatically calculated based on the IP-Address. Details for the calculation you can find in chapter 7.3.1 IP-Address respectively 7.3.2 Netzmask (Subnetmask).

6.2.8.3 Ethernet-Netmask

Here is the subnet-mask if you want to use it, to define. Please note, that you use a mask same in the current network in your system.
Between these 4 blocks you can change with → and ← . The input will be finished with the ENTER-key.
The TELE-PROFessional-II uses the subnet-mask: 255.255.255.0

6.2.8.4 ISDN IP Address

The communication between each device is a ppp-protocoll, so every device need a different ip-address. As you can connect with ISDN or analogue, so you need 2 different ip-addresses. So, every PG-TELE needs another address like the PLC-TELE. While, you don't need a communication between PLC-TELE and other PLC-Tele (PLC-TELE-option), the addresses can be the same. Please configure this address like 172.16.1.1.
This address is also divided in 4 blocks. Between these 4 blocks you can change with → and ← . The input will be finished with the ENTER-key.

Please change only these IP-address for your PG-TELE, because all other delivered devices has the same address. So you don't have to make any thought about this menu item.

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6.2.8.5 Analog IP Address

The communication between each device is a ppp-protocoll, so every device need a different ip-address. As you can connect with ISDN or analogue, so you need 2 different ip-addresses. So, every PG-TELE needs another address like the PLC-TELE. While, you don't need a communication between PLC-TELE and other PLC-Tele (PLC-TELE-option), the addresses can be the same. Please configure this address like 172.16.1.1.
This address is also divided in 4 blocks. Between these 4 blocks you can change with → and ← . The input will be finished with the ENTER-key.

Please change only these IP-address for your PG-TELE, because all other delivered devices has the same address. So you don't have to make any thought about this menu item.

6.2.9 Modem

6.2.9.1 Extension

There are only two possible adjustments:

- YES — The device is not connected directly to the line. You then need either a prefix number or a certain key combination to get to the line.
- NO — The device is either connected directly to the line, i.e. you do not need prefix number in order to get a line or the device is within a private branch exchange and should call a partner within this system.

6.2.9.2 Outline Code

Here, the key combination or the prefix number that are necessary for the connected telephone installation or each telephone set are set in order to call the line.

Possible Values:

0,1,2,3,4,5,6,7,8,9,!,“,“,/,>,#,W,*

Numbers 0 to 9	If you have to dial for example “0“ in order to get a line, you have to input “0“ here
Earthing key (R)	The earthing key can be input with the mathematical sign (>)
Flash-key (#)	The flash-key corresponds to the normal exclamation mark (!)
Break 1/8sec	It is the / (Slash)
Break 2sec	It is the , (comma)

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6.2.9.3 Count of Rings

This menu item sets the number of rings after which the TELE-Network device should pick up.

- = 0
  With this adjustment, the modem does not pick up independently. With the menu item “pick up“ you have to make the modem pick up manually.
- = 1-5
  Modem picks up after the adjusted number of rings.

The operation of these remote maintenance units is only allowed if a supervising person is present who can intervene in the installation at any time. Please do not intervene in running programmes without visual communication or control.
Before installing the TELE-LINK-Network devices, please connect them by all means with earthing PE at the casing or at the screw terminal!
Please read the user´s manual closely before installing the device. There is no responsibility taken for damage due to incorrect connection or handling.

6.2.9.4 Analogue Modem

The buildin modem can be used world wide. It has 2 approavals, the european (TBR21) and the american (FCC). The different is, that the american system has its base with 600 Ohm, the european system a complex system.

- German(complex) The connected telephone system is complexed.
- USA(600R) The connected telephone system is 600R. With this selection you should work in the USA and the other world, but not in Europe.

If the modem picks up but the modem noise is not hearable then you should change the modem type!

6.2.9.5 Dial mode

In this menu item, you can choose between two different dialling methods:

- Tone The modem dials with the multi-frequency dialling method (most common method for telephone installations, in the public telephone network only used with digital exchanges)
- Pulse The modem dials with the pulse method (sometimes, this is still used in older telephone installations, most common method in the public telephone network in Germany)

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6.2.9.6 Extension

There are only two possible adjustments:

- YES — The device is not connected directly to the line. You then need either a prefix number or a certain key combination to get to the line.
- NO — The device is either connected directly to the line, i.e. you do not need prefix number in order to get a line or the device is within a private branch exchange and should call a partner within this system.

6.2.9.7 Speaker

So, if you have very often connections to a other TELE-PROFessional-II, it is possible to switch the speaker off. If you have select this item, you will don't hear anything from the speaker, until, you switch the menu item back.

6.2.9.8 Hangup hearing

With this menu item, you adjust whether you want to hear how the modem hangs up. If so, you can also determine a time span (in seconds):

- 0 second: — You cannot hear how the modem hangs up.
- 1 to 10 seconds: — You can hear the modem hanging up for the duration of 1 to 10 seconds

6.2.9.9 Baud rate manual

This entry of the Baud rate is only valid for data and speech operation. When switching from speech to data operation, the modem has to start with an initial value (initial Baud rate) in order to build up the connection. This initial Baud rate corresponds to the "Baud rate manual".

Following items are possible:

12:	1200 Baud
24:	2400 Baud
48:	4800 Baud
96:	9600 Baud
33K:	33600 Baud

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6.2.9.10 ISDN protocol

For the connection to the digital ISDN-system, you should please note, that there are 2 different protocols are possible:

- DSS1 (Euro-ISDN)
- 1TR6 (national ISDN)

The national ISDN is today not so often used. This was in earlier day a most used system, but today not more. All new ISDN-system uses the newer form called Euro-ISDN or DSS1. With this menu item you switch the protocol. But be shure, that after selectoing this menu item, the device must be restartet.

6.2.9.11 ISDN EAZ/MSN

The so called EAZ/MSN is the device number of the TELE-PROFessional-II on this telephone plug. For the ISDN-S0-bus, every client must have this address, he will be recognized through this number. So, the TELE-PROFessional-II knows, that he will be meant and it will take the call. Often, the number of the telephone plug is also this number. Please contact your supervisor of the telephone system, to get this information. So, he can also change the ISDN-property to modem, this will be needed for this telephone plug.

A communication with ISDN is without MSN/EAZ is not possible! A special part is the system of Siemens, called HICOM. With a "optiset E ISDN adapter" you don´t need a MSN/EAZ number. If you have defined one, the device doesn't work with this system.

6.2.9.12 Analogue on ISDN

Here, with this menu item it is possibel for TELE-PROFessional with a hardware version of 1.1 to communicate with a analogue partner althoug it is connected to a digital ISDN port.
So, with this feature, you don't have to aks your customer, do they use analog or digital, you only have to select it in this menu item, you are possible to drive both.
Possibel Values: YES and NO
After changing this menu item, the TELE-PROFessional-II must be restartet.

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6.2.9.13 ISDN aLaw/uLaw

For the connection with „analogue on ISDN“ you should know, which protocol is for the digitalization of the analogue system used.

Following protocols are provides with the TELE-PROFessional-II:

- aLaw: europe / north america
- uLaw: south america

After changing of this item, you must restart the device again.

6.2.9.14 ext. modem

You can drive the TELE-PROFessional-II with analogue or digital telephone system, you can drive it also with handy or a external modem. Therefore, you have to connect the handy/modem to the PLC-V24-port of the Tele-PROFessional-II.
With this item you change the communication path to the external modem.

6.2.9.15 Ext. modem baud

Here, you can define the serial speed for the communication to a defined external modem or handy. Possible values are from 9600 up to 115200 baud.

If you connect a handy to the device, please note, that a lot of handys onlay provide baudrates of 57600 or 19200 baud. That for the connection used PLC-V24-port has the same pinning like a PC, you can try to communicate with your pc and a terminal software to this modem, to get the information of the baudrate.
Connect the handy/modem to your PC, start a terminal software (Hyperterminal, ZOC,…) and define the communication baudrate you think its correct. Now, after the activation of this, type in your software an “AT” and press Enter. Get you an “OK” for answer, the selected baudrate is ok, it is provided from the modem/handy. So, with this way, you can get the maximum possible baudrate for communication. This baudrate, you select in this menu item, connect the device to the TELE-PROFessional-II and then restart it.

Now, the devices beginns to restart and the connected external modem/handy is the standard modem for the analog communication.

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6.2.10 Connection

6.2.11 Recallmode (Only for PLC-TELE)

Here, you can turn the return call mode on or off.

Possible adjustments: YES
NO

This menu item is only necessary for the PLC-TELE.

6.2.12 Recallnumber (Only for PG-TELE)

Here, you can input the prefix number plus the number with which the TELE-Network device that requires a return call can be reached.

Possible Entries: max. 16 chars Telephonenumber

This menu item is only active with the PG-TELE.

6.2.12.1 Max. Connect time

With this menu item, you determine the maximum duration of the connection. After this maximum, the connection is disrupted. The duration is set in minutes. The maximum is 60 minutes. This item will be ignored, if you define this time with “0”.

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6.2.12.2 Max. Idletime

Here, you determine the maximum duration of the idle operation of the PG. The time span starts when there is no exchange of data between the plc and the PG anymore. After the maximum time is up, the connection is disconnected. The duration is set in minutes. The maximum is 60 minutes.
This item will be ignored, if you define this time with “0”.

6.2.13 Access code

6.2.13.1 PIN device local

Password for the protection of the configuration of your TELE-Network device (PLC-TELE or PG-TELE). The parameters of the device can only be changed after the input of the correct password.

(local =>means the device in front of you)
Max. 6 characters

6.2.13.2 PIN plc local

Password of the device that is located at the installation (PLC-TELE). This password protects the connected plc-control against unauthorised access via the telephone line. Without inputting a password, “PLC-OFFLINE“ is reported via the telephone line and then there is an access is not possible.

(local => means the device in front of you)
Max. 6 characters

6.2.13.3 PIN device remote

Input of the password “PIN device local“ at the partner device with which you are connected via the telephone line. Input only possible if the partner device does not have a password protection or if the user knows the password.

(Remote => means the device you have access to via the telephone line)
Max. 6 characters

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6.2.13.4 PIN plc remote

Input of the password “PIN plc local“ at the partner device with which you are connected via the telephone line. Input only possible if the partner device does not have a password protection or if the user knows the password.

(Remote => means the device you have access to via the telephone line)
Max. 6 characters

The access to a TELE-Network device that is protected by a password via the telephone line (see Login Remote) or at the device itself is only possible if the user knows the password.

Please do not forget your password or keep it at a safe place. In case you forget the password, you have to send the device back to the producer because it has to be reset in its original state. This cannot be done by the customer or the partner or by telefone line!

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7 Field of Application

7.1 Remote Maintenance

7.1.1 Via telephone line

7.1.1.1 Description

A (Remote-)TELE-PROFessional II, which is connected to the PLC will be called from the local TELE-PROFessional II. Consequently you can access your PLC from your PC via telephone line quick and easily.

7.1.1.2 Requirements

Hardware:

- 2x TELE-PROFessional II

The remote maintenance can be also realized with only one TELE-PROFessional II For further information please read chapter 7.1.2 WinTeleProf as replacement for PG-TELE after that.

7.1.1.3 Create Subscriber

The TELE-PROFessional II has a phone-book similar to a mobile phone in which you can store up to 197 entries.

To create a new entry or edit an existing entry choose the menu item *Edit subscriber*. More information to this topic you can find in chapter 5.2.2.4 *Menu item Edit subscriber*.

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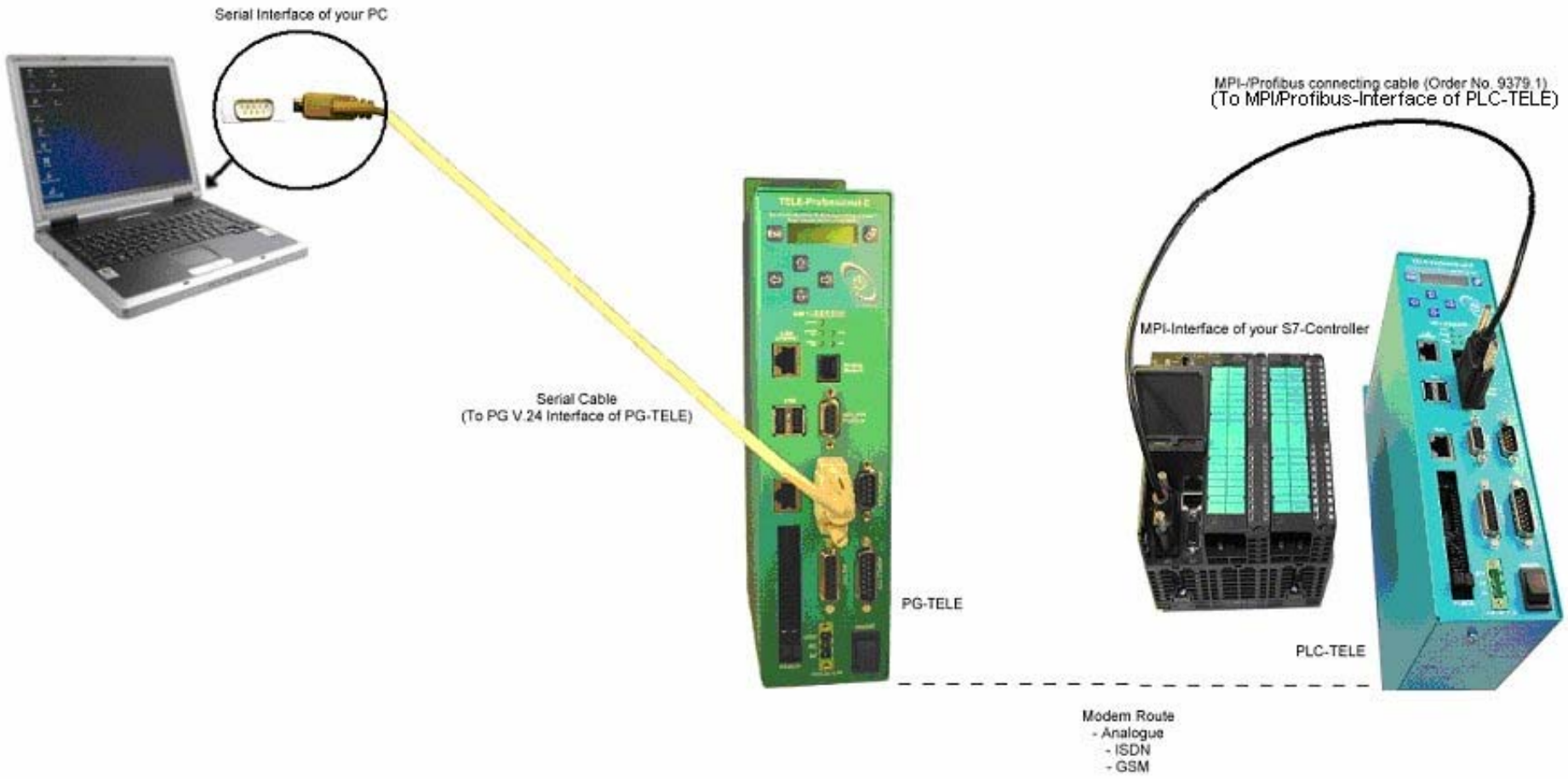
7.1.1.4 Communication establishment

Schematic:



7.1.1.4.1 Configuration PG-TELE

The Device which is connected to your PC must be configured as PG-TELE under *Configuration → Device type*.

7.1.1.4.2 Configuration PLC-TELE

The Device which is connected to the PLC must be configured as PLC-TELE depending on which PLC you want to control.

The automatic pick up should also be enabled. For this you have to set the value under *Configuration → Modem → Count of Rings* to 1.

7.1.1.4.3 Connection establishment

To establish a connection the number of the PLC-TELE has to be stored in the phone-book of the PG-TELE. Select the menu item *Select subscrb.* and then the entry which includes the number of the PLC-TELE to cause a phone-call.

7.1.1.5 Accessing PLC

Now you can communicate with the PLC as if it was connected to your PC directly.
For further information please read chapter 8.8 *Communication with an S7-PLC*.

7.1.2 WinTeleProf as replacement for PG-TELE

7.1.2.1 What is WinTeleProf?

WinTeleProf is a Software, which simulates the PG-TELE in the remote-maintenance via telephone (see chapter 7.1.1 *Via telephone line*). Thereby the remote-maintenance can be realized with only one TELE-PROFessional II. Though you will need an additional external 56k Modem and the WinTeleProf Software on your local PC.

For the remote-maintenance the carrier frequency must be constant. Some notebook soft modems neglect that, because they mainly are designed for surfing the internet, where the frequency is given by the provider. Our advice is to use an external modem instead.

7.1.2.2 Requirements

Hardware:

- 1x TELE-PROFessional II
- 1x 56k Modem Extern

Software:

- 1x WinTeleProf

7.1.2.3 Installation

1. Insert the SPS_MEGA_TOOLBOX Disc into the CD – ROM drive of your PC and wait until the SPS Toolbox appears.

Sollte dieser Dialog nicht automatisch erscheinen, starten Sie bitte die Datei Mega.exe auf der SPS_MEGA_TOOLBOX CD.

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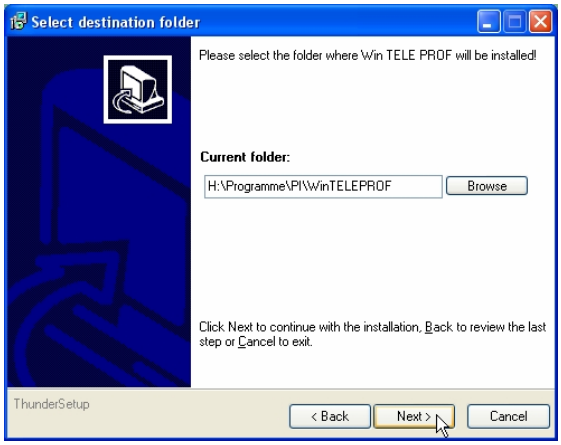
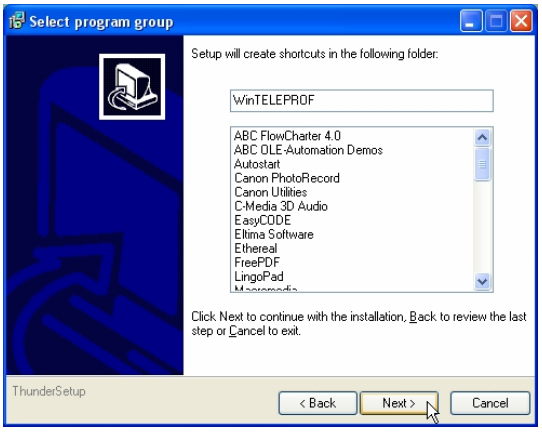
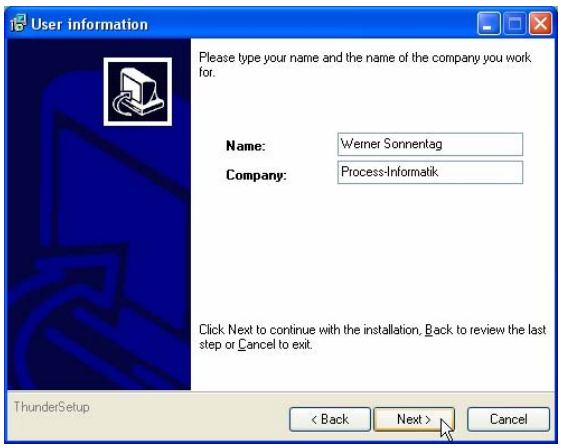
2. Click on „Tele-Professional II“ and then select „WinTeleProf“ to install the demo-version.


Select destination folder
Please select the folder where Win TELE PROF will be installed!
Current folder:
H:\Programme\PI\WinTELEPROF
Browse
Click Next to continue with the installation, Back to review the last step or Cancel to exit.
ThunderSetup
< Back
Next >
Cancel

3. After choosing language the welcome dialog appears in the chosen language. Click “Next“ to define the installation path (see picture). This can be done by clicking “Browse…”. If you are ready press “Next“ to continue.

4. In the next dialog you can choose the program folder for your start menu. Continue with “Next”.




User information
Please type your name and the name of the company you work for.
Name:
Werner Sonnentag
Company:
Process-Informatik
Click Next to continue with the installation, Back to review the last step or Cancel to exit.
ThunderSetup
< Back
Next >
Cancel

5. In the following dialog choose the Installationstype and click „Next“ to continue. Now type your name and the name of your company and confirm by clicking „Next“.

6. Now a short summary in which you can review your entries.

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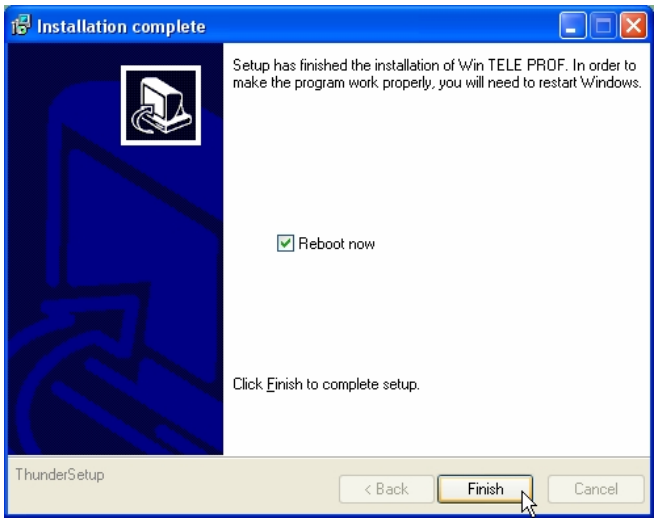
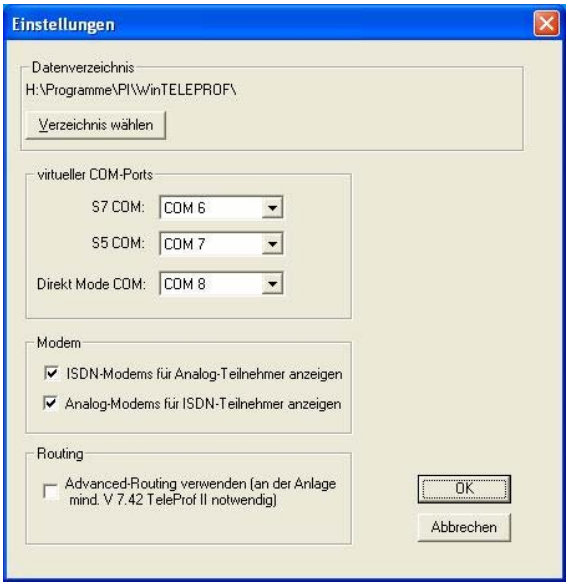
7. Now the software will be installed to your PC. This may take a few minutes on elder systems.


Installation complete
Setup has finished the installation of Win TELE PROF. In order to make the program work properly, you will need to restart Windows.
Reboot now
Click Finish to complete setup.
ThunderSetup
< Back
Finish
Cancel

8. To complete the installation you must reboot your PC now. Therefore let the checkbox „Reboot now“ checked and click „Finish“

7.1.2.4 Communication establishment

1. When starting the software for the first time the Settings-dialog will appear. Here you can define the virtual COM Ports. This dialog can be opened any time by clicking „Einstellungen“ (Settings).

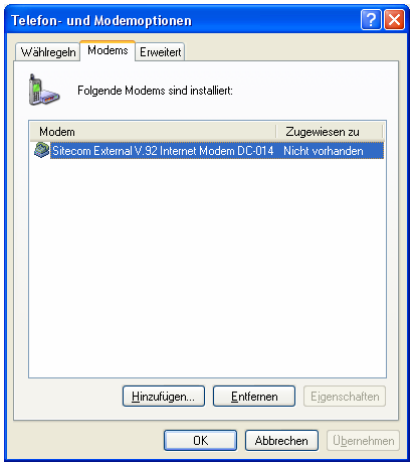


S7 COM: Via this COM Port you can access the S7 which is connected to your PLC-TELE

S5 COM: Via this COM Port you can access the S5 which is connected to your PLC-TELE

Direkt Mode COM: This COM Port is for serial extension, which means that no protocol-inspection will take place. Consequently you can connect any desired serial device.

2. Configure your modem under *Start → Settings → System configuration → Telephone and Modemoptions*



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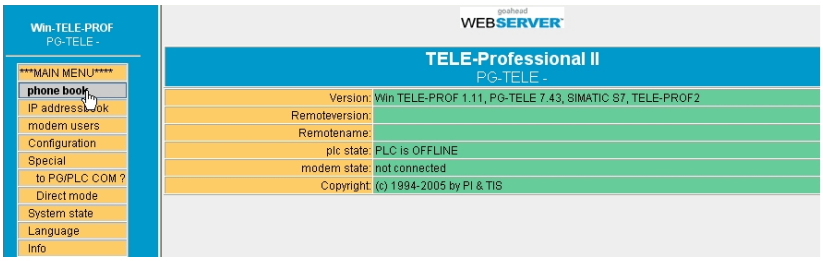
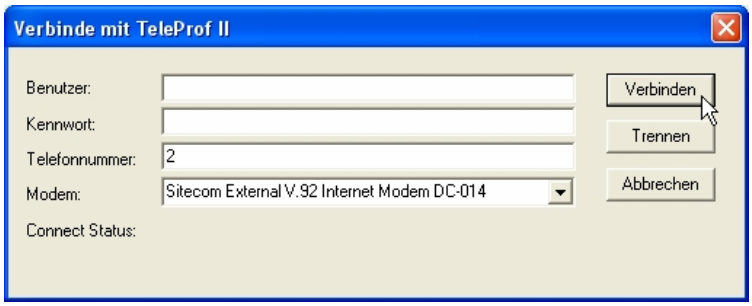


3. When you have configured your modem click „phone book“

4. By clicking the symbol next to the entry number you can edit the corresponding entry respectively create a new entry. By clicking the cross the corresponding entry will be deleted.

5. Create a new entry in which you have defined the number of your Tele-Professional II and then click on the Floppy-Disc-Symbol to store the entry.

6. Click on the phone-number and enter the login data you have configured in the menu item „Access Codes“. Check if you have chosen the correct modem and click „Verbinden“ (Connect) to cause a phone-call.



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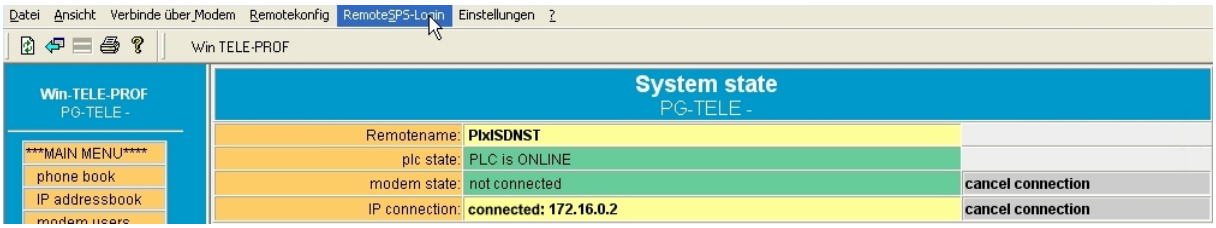
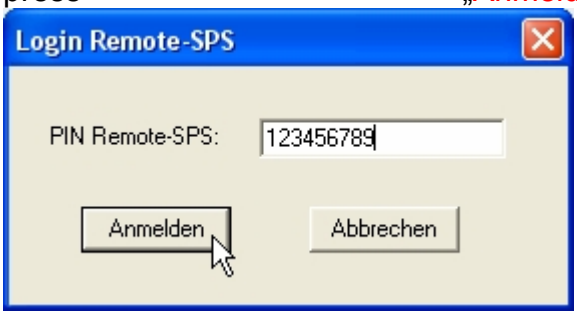
7. If the connection establishment was successful, the mainscreen will appear again. If you have configured a PIN for the local PLC in your Tele-Professional II under „Access Codes“ then click on „RemoteSPS-Login“, enter the PIN and press „Anmelden“ (Login).





8. If this Message appears, you have logged in to your PLC successfully.

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7.1.3 Operation with UMTS/GPRS/Internet/OpenVPN

7.1.3.1 Requirements

Operating-System: minimum OS 0.37
Firmware: minimum 7.34

7.1.3.2 Supported Cards

Option 3G CDMA Model: GTmax EMEA

It is recommended to run the card with an external antenna. As network operator we have tested T-Mobile and found large flexibility and consultation. T-Mobile currently offers tariffs for „web'n walk“ with a monthly data volume till 5 GB. Please note that even this amount can be exceeded. From then it will be really expensive (1,- Euro per MByte). So look out for that.

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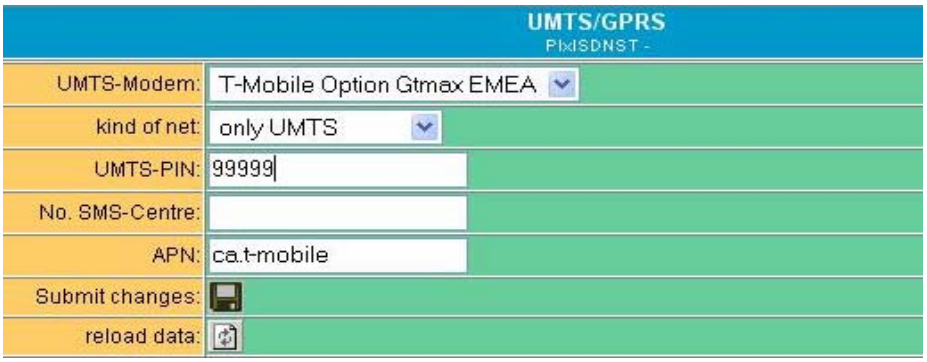
7.1.3.3 Installation

Before you insert the card configuration data has to be entered in the device:



- Cardtype

- kind of net (only UMTS, only GPRS, 1.GPRS/2.UMTS, 1.UMTS/2.GPRS)
Please inform yourself which net is available in your region from your provider before implementing. In case of doubt use 1.UMTS/2.GPRS. But therefore we will offer diagnosis possibilities in future.

- Pin
It is important, that the Pin-Number is entered correctly. Otherwise it may happen that the SIM-Card will be blocked. Unblocking it is only possible with the PUK. This method is currently not supported by TELE-PROF-II which means you ought to put the SIM-Card in a handy or a notebook and unlock it.

- No. SMS-Centre
This entry can normally be empty. If you provide the card in foreign countries please inform yourself about the corresponding numbers from your provider. This number is only necessary for SMS-operation anyway.

- APN
APN ist he so called Service-Point-Name over which you establish your internet connection at yout provider. Following names are currently known:
for T-Mobile:
- internet.t-mobile
With this APN you only will get assigned a private IP-Address and will not be reachable in the internet.
- **ca.t-mobile**

With this APN T-Mobile will assign a public IP-Addresse to the card. Therewith you can use the DynDNS-Option.

You have to activate this APN from T-Mobile. (According to the last state the activation is free of charge and very quick)

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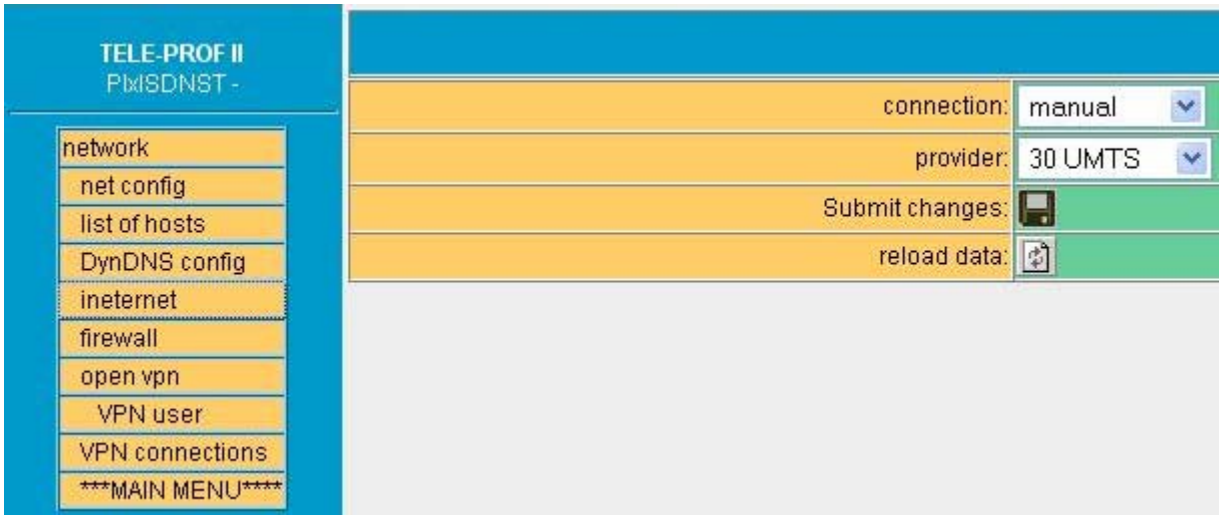
7.1.3.3.1 Internetsettings

In the network menu you can find the subitem internet.
Here you can change the settings which are necessary for an internet-connection.



There are following connection-types: manual or permanent

Absolutely important:
When connecting to the internet you should activate the firewall. Never use your public IP-Address for a direct communication. This you can do in an emergency case e.g. first configuration via internet. Always use a VPN-Channel (see below) to communicate with your PLC or other devices, which are connected to a TCP/IP-network.
Through operation via internet there can be additional costs. Ask your provider for a suitable tariff.

Manual:
When choosing this connection-type the other settings of this dialog are not relevant. This means that the user must start the internet connection via phone-book manually. Therefore create the corresponding entry in the phone-book and **don't forget the cross in the column "inet"**, so the TELE-PROF-II knows that this is a connection to the internet. After the connection is established depending to the settings DynDNS will be executed. If the connection is closed (e.g. Modem hang up) the connection will stay closed.

Permanent:
Select a Provider from the phone-book.
Even here you have to note that the cross in column "inet" is set.
The internet connection will be tried to remain. That means if the device will be turned on the TELE-PROF-II will automatically turn on the internet-connection. Even if you cut off the connection the TELE-PROF-II will turn it on again.
However we will implement different alternatives.

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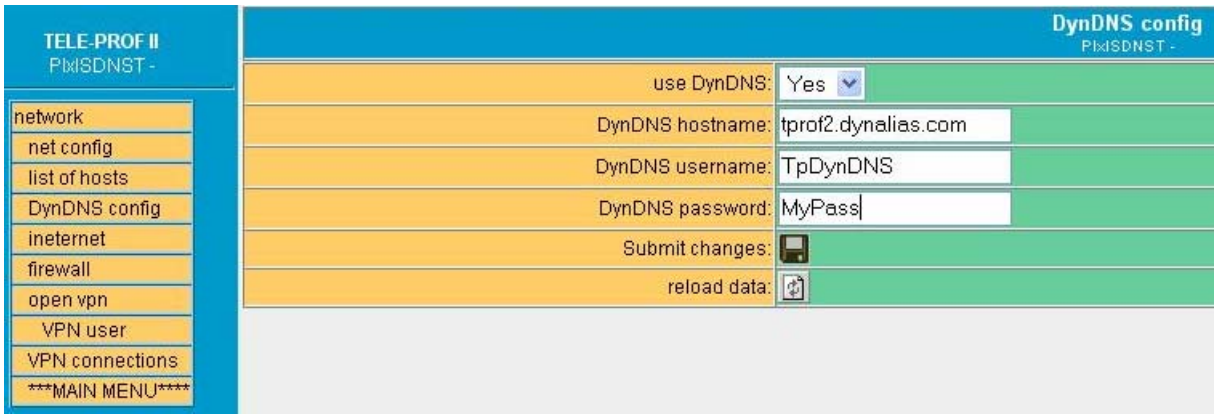
7.1.3.3.2 Using DynDNS



We presuppose that the provider has given us a public IP-Addresse.
Now the question is: How can the TELE-PROF-II after dialing-up to the internet be reached?
For this problem there is a solution in the internet. The service provider DynDNS (DynDNS = Dynamic DomainName Server) (http://www.dyndns.org) offers a service. Therefore you have to register at DynDNS. Details you can find on the homepage of DynDNS. Up to 5 dynamic IP-Addresses are free. If you need some more you can order a corresponding number of names from DynDNS against payment.
Roughly it works like following:
You register your desired hostname at DynDNS e.g. mysystem.dynalias.com. For your access you will get a username and password. These you have to enter in the setting **DynDNS config** and set „use DynDNS“ to yes. At the next internet dial-up the TELE-PROF-II will register the IP-Address which is assigned to it under mysystem.dynalias.com. Instantly you have access to the machine via the address mysystem.dynalias.com. However you are working with the firewall (see below) and the access via modem (except for OpenVPN) is blocked the ping or something like that won't work. For testing you can unblock the ping service via modem. Now you should get an answer at „ping mysystem.dynalias.com“. Deactivate ping via modem again (internet connection must not be closed) and you will get no answer. Now you know that your device is reachable via internet.
From now on you can create a connection to the device via OpenVPN and maintain your machine. Even OpenVPN uses the entry mysystem.dynalias.com.

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What to do if no public IP-Address is present?
Please read the chapter OpenVPN first, at the end of the text you will find a solution.

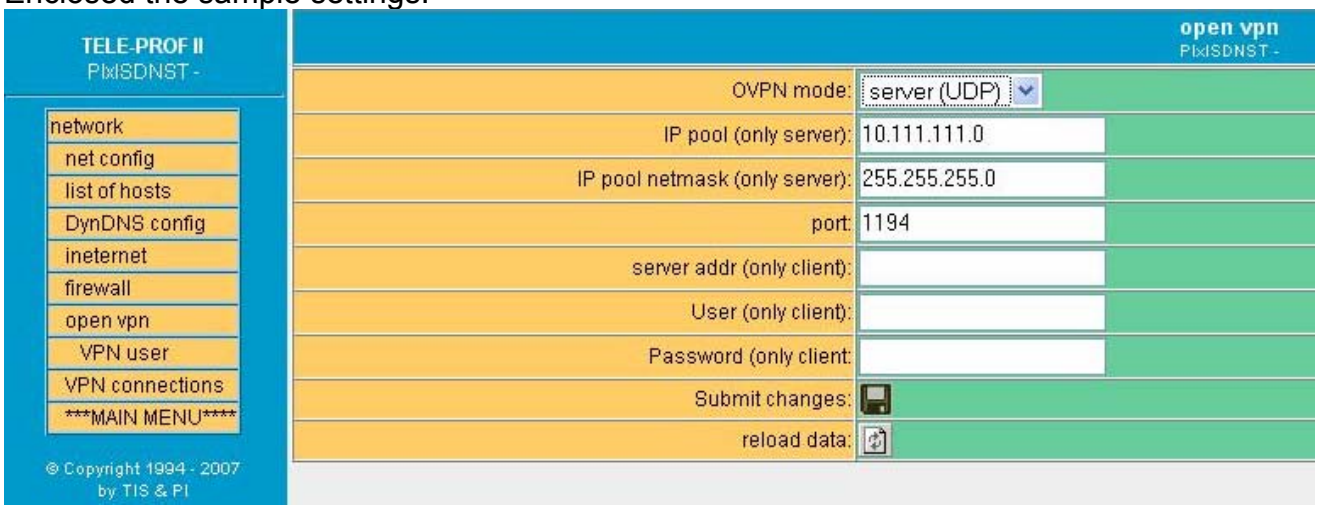
7.1.3.3.3 OpenVPN

7.1.3.3.3.1 Function

In the TELE-PROF-II we have implemented the popular under Opensource published OpenVPN. Detailed information you can find under http://www.openvpn.net .
Here the function of OpenVPN is described, how it is implemented in TELE-PROF-II.
Basically there are two operating modes of OpenVPN: server or client.
Normally the device on machine-side (PLC-TELE) is configured as server. With OpenVPN we provide a new network-interface in TELE-PROF-II. This interface will quasi be connected to the OpenVPN-interface of the partner-device with a virtual line. This line will be realized with software. Thereby all protocols for this interface are exchanged via an own UDP-Channel. You can say it is a phone-call per UDP between both devices. Obviously the connection is crypted. The keys are stored in TELE-PROF-II.

7.1.3.3.3.2 OpenVPN server-mode

Enclosed the sample settings.



In server-mode you give the IP-Address which the network-interface of the OpenVPN server will obtain. This will be committed in IP pool.
In our sample the Server will get the Address 10.111.111.1 and 10.111.111.2. OpenVPN will reserve these addresses automatically, because later a PPP-Connection will be realized across them.
In IP pool netmask you can define from which IP-Range the clients, which connect to your TeleProf via OpenVPN, will get an IP-Address for their networt-interface.
When choosing the addresses note that you select an address-range which is not used by the Ethernet-Interface of the Prof II or by a modem (analogue or ISDN). The virtual tunnel-addresses are (almost) any desired, they must be **private addresses**. They even should come from another block than the real addresses, so the **routing** will be easier – real and virtual networks are easy to differentiate.

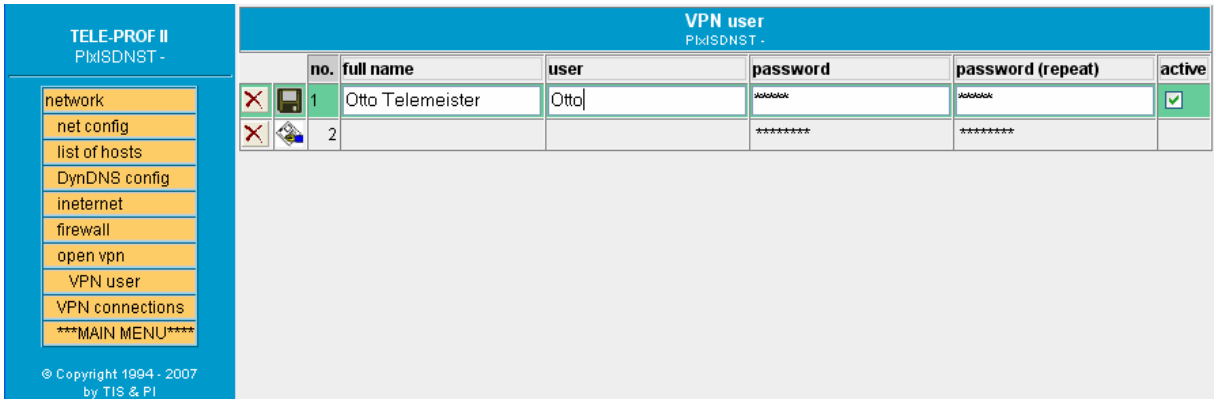
Private Address: Normal public IP-Addresses are worldwide unique. Only like this a packet can find its correct destination. In contrast to this the private IP-Addresses are only valid in local networks, they will not be routet into the public internet. That's why many networks can use the same private addresses. For this purpose several IP-ranges are reserved: 10.x.x.x and 192.168.z.z as well as 172.16.y.y to 172.31.y.y.
The communication basically is over UDP: merely you give the Port over which you want to communicate. The Ports 9999 and 9998 should not be used as they are used by the TELE-PROF-II. As default 1194 will be set. If you are using a firewall make sure this Port is free (in this case UDP 1194). If you want to communicate with the TELE-PROF-II from a PC over an OpenVPN-connection make sure that these settings are configured in the firewall of your PC, too.

7.1.3.3.3.3 Access authorization

Who is allowed to build an OpenVPN-Connection? How can the Access be controlled?

Principally everyone who has got the certificate and the IP-Address of the TELE-PROF-II can build a VPN-connection and access the device. This is comparable with when you have connected the device to the telephone-line but not given a password for the authentication.

Protecting the device of unauthorized access



Enter the participants which are allowed to connect via OpenVPN under VPN-User.

A T T E N T I O N:
Only users which are marked with "active" will be allowed to connect. If no users are entered or no user is active so every user will be allowed to connect never mind which username or password is used. So the access is opened. THEREFORE: minimum one active user should exist. This option is only helpful, if you have lost your login data and it is necessary that you have to access the machine!

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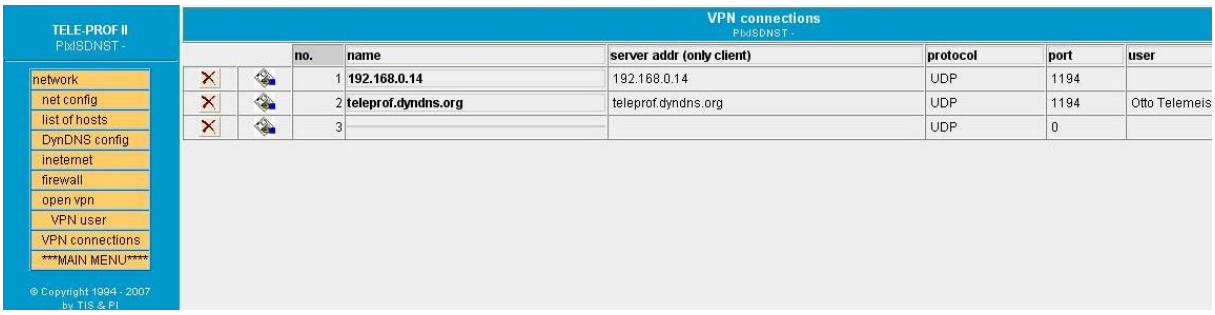
The server side (PLC-Tele) is now configured. We presuppose that the PLC-Tele is connected to the internet e.g. via UMTS and reacheable under „teleprof.dynalias.org“.

7.1.3.3.3.4 Client (PG-Side)

Create an entry under „VPN connections“ which points to the address „teleprof.dynalias.org“ .
Protocol: UDP, Port: 1194 Users have to be created under VPN-User (same as PLC-TELE).



Now make sure that the PG-Tele has an internet connection.
This can either be done by dialing-in to a provider via modem (create a phone-book entry with the corresponding number and mark by clicking “inet”) or by entering the address of your router as Standardgateway and DNS in the network settings. In this case the connection will be established via Ethernet TCP/IP and your router. Here you have to look out for the firewallsettings. The Port UDP 1194 musst be opened.
If the internet connection is established just click the corresponding entry in of the VPN-connection and the connection should establish.

7.1.3.3.3.5 After establishing VPN-Connection

If the VPN-connection is successfully established a route with all the IP-Addresses which are reachable via Ethernet-interface of the server (PLC-Tele) will be created for the client.
Example:
PLC IP-Address: 192.168.1.99
PLC-Tele-Ethernet-IP-Address: 192.168.1.54 Mask 255.255.255.0, (Routermode on)
OpenVPN-Pool: 10.111.111.0 Mask 255.255.255.0
PG-Tele: Ethernet-IP-Address: 192.168.0.54 (Routermode on)
PC: 192.168.0.1 (Standardgateway 192.168.0.54)

If the VPN-connection is established you can for example reach or even program the PLC with „ping 192.168.1.99“

7.1.3.3.3.6 Client PC-Side

For connection with a PC you need:

1. An Open-VPN-installation on your PC
2. The corresponding configuration file and the appropriate certificate for the TELE-PROF-II
3. The IP-Address of the TELE-PROF-II-device in the Internet. This can be a fix or a DynDNS registered address.

If you use our OpenVPN-Install-Tool the file TProf2config.ovpn will be installed in /program files/OpenVPN/Config.
Enter the following parameters in this file for:
remote (= IP-Address of dest. device: e.g. fix: xxx.yyy.nnn.xxx.) or a DynDNS registered Domain e.g. test.dyndns.org.
port (like configured in TELE-PROF-II, Default = 1194)

Note that your firewall has to allow the UDP-Connection for this Port

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Statement from the Config-file:

```
##############################################
# client-side OpenVPN 2.0 config file        #
# for connecting to TeleProf II              #
#                                            #
# On Windows, you might want to rename this  #
# file so it has a .ovpn extension           #
##############################################

# hier die Remote IP-Adresse für TELE-PROF-II eingeben
# here set the remote ip address of TELE-PROF-II
# e.g. remote tprof2.dynalias.org
# replace xxxx with the ip-address
remote tprof2.dynalias.com

# hier den Port für OPenVPN eingeben
# here set port of TELE-PROF-II, standard is 1194
# if you change it, you have to change it on both sides
port 1194
```

You can create this file for every of your machines and rename the file after the name of the corresponding machine.

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7.1.3.3.4 Connection establishment by using the OpenVPN GUI

After installation the OVPN-GUI Symbol should appear in the task list. Move the cursor over the icon choose the corresponding config-file and press “Connect”. The rest should happen automatically. If there is only one config-file, so directly click connect.
If there is any problem please look at the Log-File. There you can find information about what didn’t work.

OpenVPN installs the so called TAP-network adapter in windows. That is a virtual network adapter. This adapter will receive an IP-Address from the IP-Pool, which was configured in the TELE-PROF-II-OpenVPN-Server.
If the „Routermode“ is activated in the TELE-PROF-II-device the corresponding route to the Ethernet-IP-network of the TELE-PROF-II will be set for you automatically.

Example
IP-Pool: 10.111.111.0
IP-Pool-Mask: 255.255.255.0
Ethernet-IP of the TELE-PROF-II: 192.168.100.1
Ethernet-IP-Mask: 255.255.255.0
IP-Address of your PC: 192.168.1.1
Assigned Address of your TAP-Adapter: 10.111.111.16

After the connection is established all IP-Packets which are sent to the networks 10.111.111.0 and 192.168.100.0 will be routed over the IP-Address 10.111.111.16 of your TAP-Adapter. After disconnecting this route will be removed automatically.

7.1.3.3.5 Operation of WinTELEPROF via VPN

Please proceed like this:

1. Start VPN-connection
2. create an entry in the IP-Address-book with the first IP-Address of the IP-Pool of the Destination-TELE-PROF-II (e.g. 10.111.111.1) or the Ethernet IP-Address of the Destination-TELE-PROF-II (e.g. 192.168.100.1) and connect

7.1.3.3.6 Configuration of the Remote Device

1. Start VPN-connection
2. Start WEB-Browser with the first IP-Address of the IP-Pool of the Destination-TELE-PROF-II (e.g. 10.111.111.1) or with the Ethernet IP-Address of the Destination-TELE-PROF-II (e.g. 192.168.100.1).

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What to do if no public IP-Address is present?
Some UMTS/GPRS-Providers do not assign a public IP-Address to the UMTS-Cards. In this case DynDNS can not be used. However for this problem there is a solution.
You can your modem under http://www.mdex.de/. Details you can find on the homepage of Mdex.
From Mdex you will get an OpenVPN-Access, too.
If you don't want to perform routing on the TELE-PROF-II on the machine-side you can also connect to the IP-Addresses which are given by Mdex. (In this case you can decline OpenVPN on TELE-PROF-II) But if you want a safe connection you should use VPN here, too.
If you want to perform routing, OpenVPN has to be active in the TELE-PROF-II on-site. Furthermore you will have to configure another TAP-adapter. You can find the tool which is necessary therefore in the OVPN-directory.
After connecting to Mdex, start another OVPN-connection to the TELE-PROF-II over the IP-Address given by Mdex.

7.1.3.3.7 Tip for installation

1. Configure the TeleProf and run in the local network
2. Install OpenVPN on your PC and enter the local IP-Address of your TELE-PROF-II as remote-address
3. Start connection. If this configuration works you can configure via internet.

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7.1.4 Tele-Prof-II and GSM as Telephone line

The Tele-Prof-II also can be called via GSM any time. Therefore you have to notice the following points:

- PSI-GSM/GPRS-Modem/RS232 by Phoenix
- SIMM-Card (3.3V) with activated CSD-(**C**ircuit **S**witched **D**ata)-service. It is **not an M2M-connection** and will not be billed by volume (Mega-Byte). Normally it is a regular SIM-Card with an extra phone-number for modem-communication and one for FAX-communication.

The GSM-Modem has following parameters. Thereto Phoenix supplies an extra parameter-software called “PSI-MODEM-CONF”. The parameters for the serial interface should be set like following:

Other serial parameters concerning the baud-rate are possible any time, but the best experiences have been found with 57K6. The Baudrate 115200 has sometimes not been recognized correctly by the modem.

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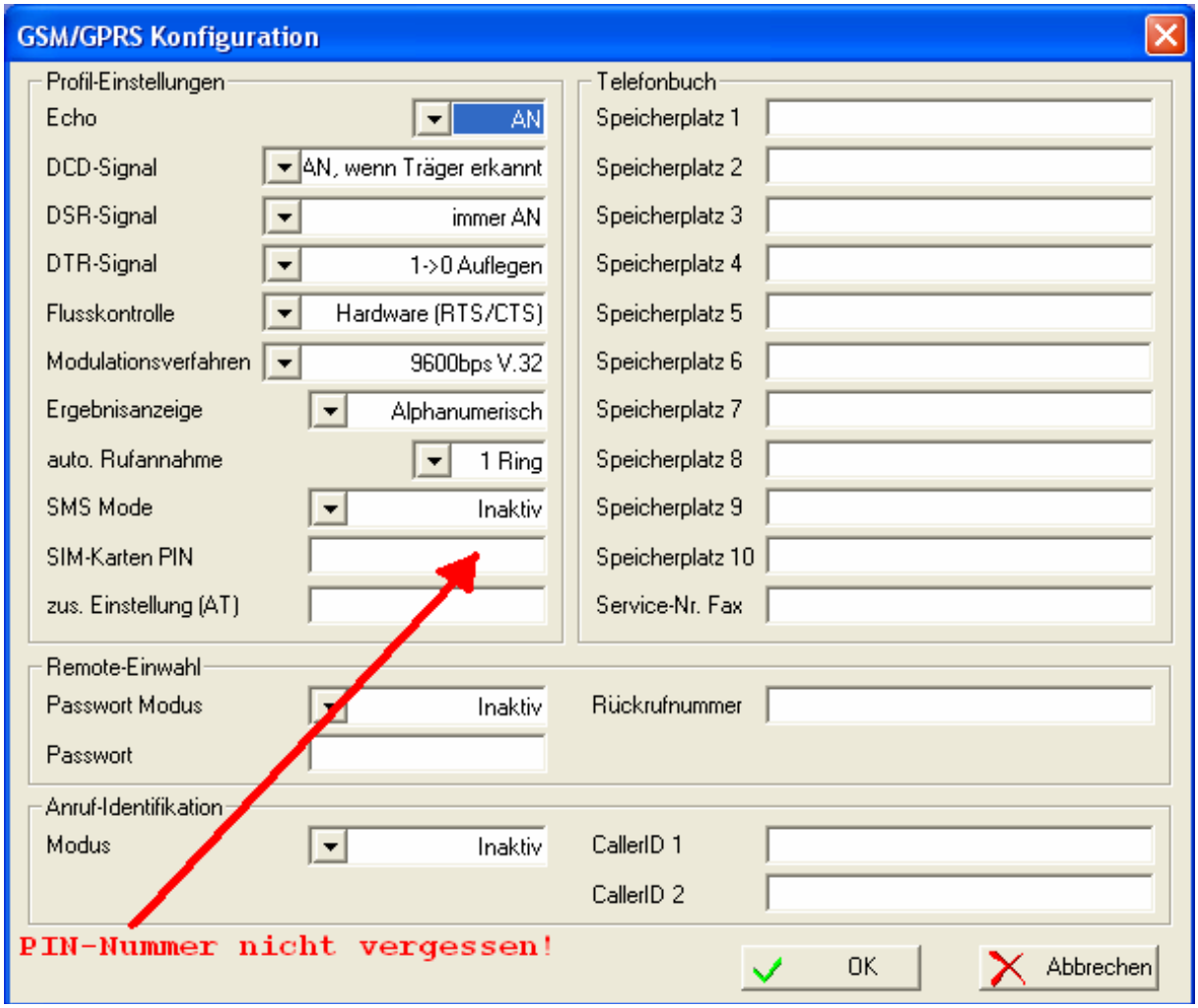
The modem-settings itself:



The Phoenix-Modem will be connected to the PLC-V24-connector of the Tele-Prof-II with a null-modem-cable. This is the same cable which is used for the connection with a PC.
At devices which are used for the S5-remote maintenance the S5-controller can not be connected as usual anymore. In this case the S5-controller has to be connected to PG-TTY-connector. The connection cable for this can be ordered with the order number 9359-90.

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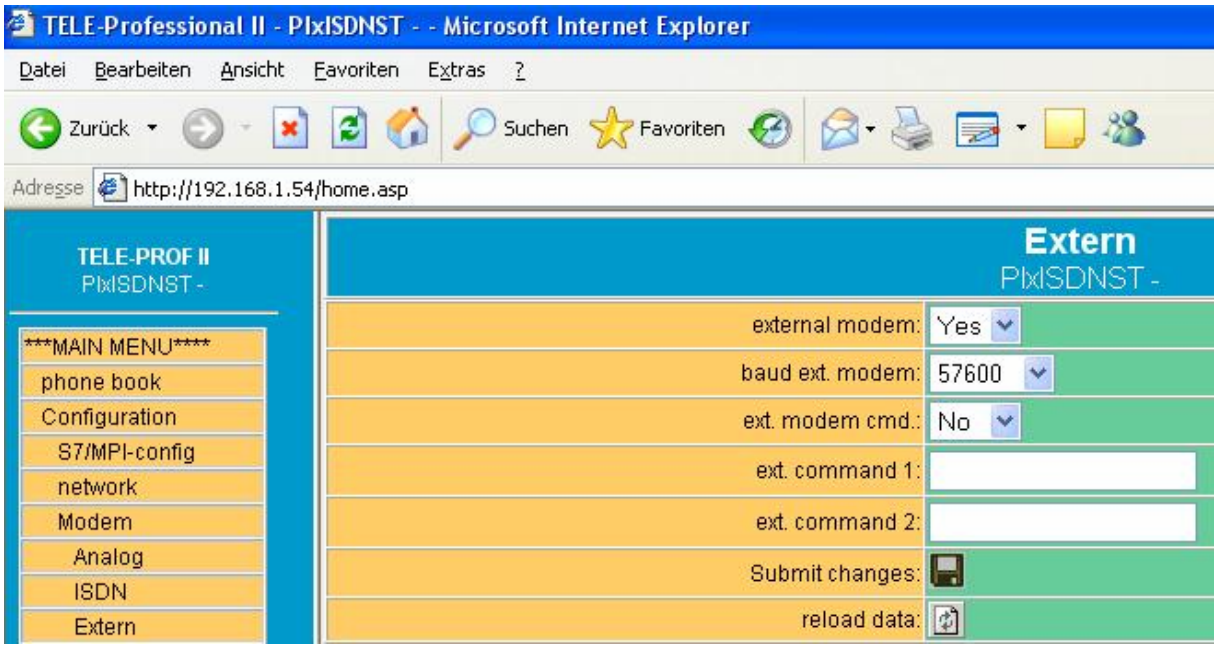
When the modem supplied with power it has to be parametered in the Tele-Prof-II which can be doen best over the Web Browser.

Configuration in TP-II:



The GSM-Modem has to be connected with the PLC-V24-connector via null-modem-cable before changing the settings!

When the settings are stored in the Tele-Prof-II all accesses to the modem will be transferred to the external modem.
If the modem is not connected the device will stop with error messages. In this case mostly only a switch-off can help. Then connect the modem and restart the device. Then the external modem has to be deactivated and the new configuration has to be stored.

A T T E N T I O N:
In the calling device (PG-TELE) for this the entry „no MNP" must be activated via Web Browser.
A connection with a TELE-PROF-I or Tele-Link as PG-TELE is not possible in this case.
A connection-establishment from this GSM-Device to a TELE-PROF-I or Tele-Link is also not possible; Tele-Prof-II is possible, but at the first connection-establishment you have to call twice so the device can switch to no MNP mode.

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7.2 PLC-Coupling

7.2.1 Coupling of several plcs via the telephone line

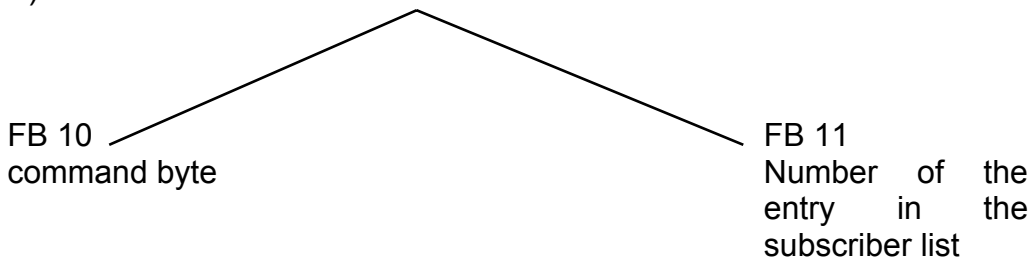
With the function SPS-TELE, texts, modes, data modules etc. that have already been stored in the plc can be transmitted from the plc to another plc or they can be fetched from the plc if needed.

7.2.1.1 Set up a communication word between the plc and the TELE-Network device

With each option that demands a common communication flag word between plc and TELE-Network device, the flag word is set up according to the following scheme and is read by the TELE-Network device every 5 seconds:

Example: FW10 (can be divided into FB10 and FB11)

FW (Flag word) 10



Reference card for the command byte

01h: Start dialling process
After the connect with the called station, a 10h is written back in this register.

02h: Hang up the modem
This command is only possible if the connected TELE-LINK is the caller or if there is no connection by phone at all. The TELE-LINK then disconnects the existing connection. If the command has been executed, a 30h will appear in the status register. In case of an error, a 50h will appear.

03h: Hang up the modem in any case.
This instruction is executed in any case immediately and directly. A 30h will appear in the same register.

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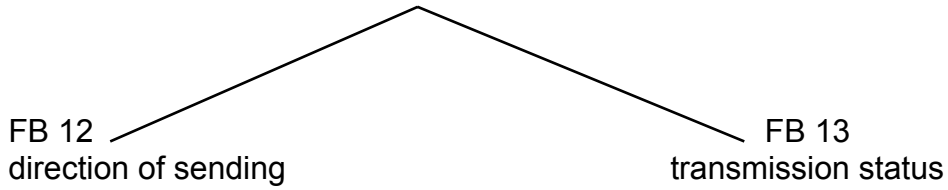
Return messages of the TELE-network device in the command byte

10h: Modem connection with TELE-LINK (plc-TELE or PG-TELE) existing
20h: The number of the desired subscriber entry is invalid
30h: Modem connection does not exist anymore, e.g. after hanging up or after the partner has hung up
40h: A Connect is not possible (probably because line is busy)
50h: The command to hang up (02h) could not be executed
60h: Modem connection with ASCII subscriber exists

7.2.1.2 Setup of the SPS-TELE flag

Example: FW12 (can be divided into FB12 and FB13)

FW 12



Direction of sending

01h: The command to send is triggered
The entries in the communication DM are treated as a command to send. The defined sector is transmitted to the partner.
Sender = sender of the command (source)
receiver = partner (target)

02h: The command to fetch is triggered
The entries in the communication DM are treated as a command to fetch. The defined sector is transmitted from the partner to the sender of the command.
Sender = sender of the command (Target)
receiver = partner (source)

Transmission status

01h: command ready without mistakes
02h: command executed, but you have to check for TIMEOUT, the command should be completely executed after 45 seconds
03h: source module does not exist or is too short
04h: target module does not exist or is too short
05h: mistake; the command has to be repeated
06h: configuration DB does not exist
07h: parameter fault
08h: the partner device is not a SPS-TELE

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7.2.1.3 Setup of the communication data module at the SPS-TELE

7.2.1.3.1 S5

DW0: KC = data type of the source: (at the moment, only DB possible)
'DB' data module
'EB' entry byte
DW1: KF = source DB number
DW2: KF = initial address of the source sector = StartDWNr
DW3: KF = number of words
DW4: KC = Data type of the target (at the moment only DB possible)
'DB' data module
'EB' entry byte
DW5: KF = target-DB number
DW6: KF = initial address of the target sector = StartDWNr
DW7: KF = number of words

7.2.1.3.2 S7

If you use the plc-option with an siemens s7-plc, you have to look before programming the Communication-DB for even dataword-adresses. So this Communication-DB looks like this:

adress	name	type	Value
0.0		STRUCT	
+0.0	source_datatyp	CHAR	´ D ´
+1.0	source_datatyp1	CHAR	´ B ´
+2.0	source_DB_Nr	INT	10
+4.0	source_beginning_DW_Nr	INT	0
+6.0	source_number_of_words	INT	2
+8.0	destination_datatyp	CHAR	´ D ´
+9.0	destination_datatyp1	CHAR	´ B ´
+10.0	destination_DB_Nr	INT	10
+12.0	destination_beginning_DW_Nr	INT	0
+14.0	destination_number_of_words	INT	2
+16.0	temp_array	ARRAY[1..512]	
*2.0		INT	
=1040.0		END_STRUCT	

Please note, that you proofe the edited DB in your plc, because, there are often failures, if you use in your Step 7 Software for editing your DB, the declaration window or the data window!

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7.2.1.4 Send data with the SPS-TELE

In order to send data to or fetch data from another plc, you first have to define a communication flag word, a communication data module, and the PLC-TELE-flag in the TELE-LINK. The communication flag word and the PLC-TELE-flag always have to be input as an even number (0, 2, 4, 6, ..., 254).

In order to start the transmission and to call the subscriber 4, the plc now gives the following command to the communication flag word (f. ex. FW 10): 0104h.
The remaining data and the actual communication are executed according to the scheme defined in the DB.

Please note, that you have selected the pg-mux-mode for pg-mux (see chapter 6.2.7 PG-MUX-Mode (Only for PLC-TELE and S5))

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7.3 RouterMode

Example:
You want to communicate with another PC from your PC via a Tele-Prof-II-connection. Therefore it is important that the IP-Address-families differ from each other! That means if you have the address-family 192.168.1.xxx in the office the same family should not exist on-site.

A communication in RouterMode is not possible if the same family exists on both sides!

If possible the IP-Addressfamily of the Analoque- and ISDN-IP-Address should not be changed. An assimilation of the addresses could cause communication problems which partially only occure sporadically.

The Router-Mode has to be active on both sides!

Office		**Machine-Side**	
PC-IP-Address:	192.168.1.11	PC-IP-Address:	192.168.2.10
PC-Subnetmask:	255.255.255.0	PC-Subnetmask:	255.255.255.0
Standardgateway:	192.168.1.54	Standardgateway:	192.168.2.12
		since Firmware V6.74 with Operatingsystem (OS) V0.11 no Standardgateway has to be entered! This function is works automatically!	

Tele-Prof-II Configuration Office-Side:

Configuration Office-Side -	
Device type:	PG-TELE
Device name:	Office-Side
router mode:	Yes
IP-Addresses Machine-Side -	
Ethernet-IP:	192.168.1.54
use netmask for ethernet:	No
ethernet netmask:	255.255.255.0
ISDN IP address:	172.16.0.128
analog IP addr:	172.16.0.129

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Tele-Prof-Configuration Machine-Side:

Configuration Office-Side -	
Device type:	AG-S7 300/400
Device name:	PLC-Side
router mode:	Yes
IP-Addresses PLC-Side -	
Ethernet-IP:	192.168.2.12
use netmask for ethernet:	No
ethernet netmask:	255.255.255.0
ISDN IP address:	172.16.0.130
analog IP addr:	172.16.0.131

If you use a configuration like described the communication from LAN to LAN should work properly after connection establishment.

If you want to use the Tele-Prof-II as Router some basic knowledge about IP-Addresses, Subnetmask and Gateway is required. Therefore a short description in the following.

7.3.1 IP-Address

A typical IP-Address in decimal notation looks like following: 149.174.211.6 - four numbers devided by dots. The dots have the task to communicate with superior and inferior networks. Just like a country-identification-number, local-network-identification-number, participant-telephone-number and sometimes an extension belongs to a phone-number in the worldwide telephone network there is an area code - the **network number**, and an extension - the **host number**, in the internet as well.
The first part of an IP-Address is the network number and the second part is the host number. The border between network and host number is defined by a classification scheme for network types. The following table makes this scheme a little clear. In the columns for the IP-Address and the typical example the network number (area code part) is marked fat. The rest of the IP-Address is the host number of a PC within this network.

Networktype	Scheme	Typical IP-Address
Class-A-Network	**xxx**.xxx.xxx.xxx	**103**.234.123.87
Class-B-Network	**xxx.xxx**.xxx.xxx	**151.170**.102.15
Class-C-Network	**xxx.xxx.xxx**.xxx	**192.23.155**.113

The highest hierarchy-level are the so called **Class-A-Networks**. Only the first number of an IP-Address is the network number, the rest of the numbers are host

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numbers within this network. Possible network numbers for such a network are numbers between 1 and 126, which means that worldwide only 126 Class-A-Networks can exist. So an IP-Address belongs to a Class-A-Network when its first number is between 1 and 126. The American military network for instance is a Class-A-Network. Within one Class-A-Network the corresponding network provider can freely assign the second, third and fourth number of each IP-Address. As each of the three numbers can have the value between 0 to 255 a Class-A-Network-provider can assign up to 16,7 million IP-Addresses to hosts within his network.

The second highest hierarchy-level are the **Class-B-Networks**. The network number of such networks stretches over the first two numbers of the IP-Address. The first number of the IP-Address of a Class-B-Network can have a value between 128 and 191. The second number can have values between 0 and 255. Thereby about 16.000 of such networks are possible. As the numbers three and four also can have values between 0 and 255 a Class-B-Network can have up to ca. 65.000 hosts. First of all Class-B-Networks are assigned to huge firms, universities and online-services.

The lowest hierarchy-level are the **Class-C-Networks**. The first number of an IP-Address can have the values between 192 and 223. The numbers two and three belong to the network number, too and can have the values between 0 and 255. More than two million of such networks are addressable. First of all these networks are assigned to smaller firms with a direct internet connection and smaller Internet-Providers. As there is only one number left which can have the value between 0 and 255, a Class-C-Network can only have up to 255 hosts. One number of it is reserved, so there are only 254 possible hosts left.

7.3.2 Netzmask (Subnetmask)

The netmask (or Subnetmask) is a bit mask, which separates the IP-Address in a network- and a host part.
A netmask is as long as the IP-Address (32 Bit in IP-Version 4 and 128 Bit in IP-Version 6) on which it is used. Every bit of the netmask relates to exactly one bit of the IP-Address. Every bit of the netmask which is set to 1 marks the corresponding bit of the IP-Address as network part, which addresses the particular subnet. The bits set to 0 mark the host part, with which each computer in this subnet is addressed.

The notation of a netmask is mainly not in binary but (like the IP-Addresses) in the dotted decimal notation. With the foundation of CIDR the netmask was only a decimal number which specified the used network part.
Examples (the first three entries correspond the origin network-classes A to C):

Netzmask (binary)	Netzmask (decimal)	Netzmask (CIDR)
11111111.00000000.00000000.00000000	255.0.0.0	/8
11111111.11111111.00000000.00000000	255.255.0.0	/16
11111111.11111111.11111111.00000000	255.255.255.0	/24
11111111.11111111.11111111.11000000	255.255.255.192	/26

The network part is usually continuous (without intercostals zeros).

7.3.3 Standard Gateway

If an IP-Address is tried to reach, which is not in the own network in the first place the PC doesn't know where to find the address. Therefore a Standard Gateway can be defined (the Standard Gateway can be defined in the network settings). If such a Standard Gateway is configured the PC looks for remote-IP-Addresses via this device.

7.3.4 PPP-connect for the router function

In the menu item *Configuration → acces code → modem-user* you can define user for the modem-connection. The item has 4 parameters:

- complete name ➔ this is the name for the data set
- user name ➔ this is the name for the user
- password ➔ password for the user
- direction ➔ direction for the account

Please check, that the password is written down correctly. Please check uper- and lower case.
Possible values for the direction:

- DialIn ➔ This data is only for the acces for a standard tele-service
- DialOut ➔ The configured data is only for the login to the router.
- DialIn/Out ➔ data for login to the router and acces for tele-service

In the menu item *configuration → acces code → dialing protect* you can activate this acces code for the modem connection.

If you have defined a modem user with the direction DialIn/Out, the dialing protect will be activated automatically. A acces to this device is only with PC (with modem-connection and password) or with TELE-PROFessional with firmware greater than 6.31 possible. With the keypad, you can switch off this dialing protection.

7.3.4.1 Connection to a dialing protected TELE-PROFessional-II

1.) Edit modem user in the device
2.) Select in edit subscriber for the telephone number the correct data set name.
3.) Begin to dial to this entry with select subscriber, after connect, you can work.

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7.3.4.2 Edit of the modem user with keypad and display

- goto the menu item *configuration → acces code → modem user*
- select with ↑ and ↓ the data set, you want to edit. Select it with the ENTER-key
- now select the field (complete name, user name, password, direction) , you want to edit, delete or store.
- now, press ENTER and you are in the edit-mode
- with ESC your input will be stored
- after, you are ready for editing, you can store the data with the menu item save.
- you can edit every time a new user

Connecting with LAN (ONLY for PG-TELE)

IN the menu item IP addressbook you can edit your clients with the correct ip address. The ip address can be seperated with the "." Or you write the DNS-name down.

With the menu item "connect IP address" you select the client you want to connect. Press ENTER to build the connection. After, you got the connect, the Connect-LED goes on. With the menu item hang up you can cut the connection.

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7.3.4.3 How to define hostname, DNS and gateway

In the menu item *configuration → net-config*, you can define the hostname for the TELE-PROFessional-II. You can also define up to 3 DNS-server addresses. These server will be needed, when you use instead of ip-addresses names and this names ar not written doen in the own hostlist.

Example for the host list:

PG-TELE	192.168.1.51

So, you write down in the IP-address book instead of the ip-address the name PG-TELE. So, the device looks in its own list or in the defined DNS-server list, which ip-address is the correct for PG-TELE and begin to dial.
So, is you use the DNS-Server, you can edit central in your company a list with all ip-adresses and the name and every client can read and wortk with it. If you have no a change, you only have to change this list and not every client in your network area. And, es foreign person don't know, what to to with this names.
For this feature, you need the OS 0.10 in your TELE-PROFessional-II.

Standard Gateway
This is the IP-address in the network system, where the device can send to TCP/IP-packages, itself can't send it, because the ip-address is not in this system.
So, the gateway is a interface, that can send the data to other not in this system placed clients.

Example: Operation with a router

Tele-Prof-II (from PC) ➔ (Ethernet) ➔ Router ➔ Internet with VPN ➔ Router ➔ Tele-Prof-II (To PLC)

So, the IP-address of the router is defined inside the TELE-PROFessional-II as the gateway address. This entry can be written down like the normal ip-addresses or with a dns-name for example Router1.

Host list

This list is the list, where you write down a dns-name and the correct ip-address. So, you want to connect to the dns-name PG-TELE, this device looks at first in its own host list, and then, if there is no correct entry, it looks at the defined DNS-server. So, this host list is a own private DNS.

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7.4 Send failure signals

7.4.1 FAX

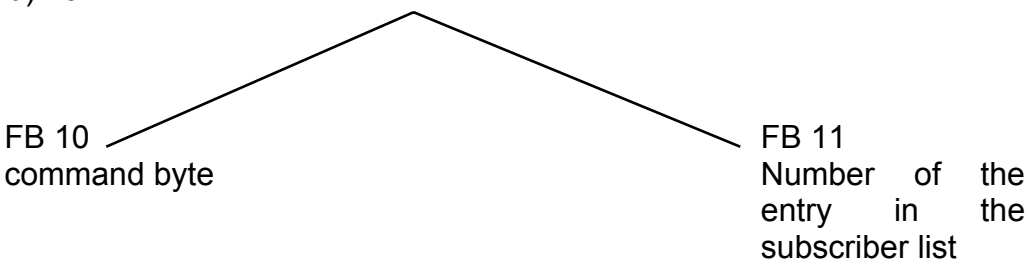
With the special option FAX-TELE, texts, modes, data modules that have already been stored in the plc can be transmitted to a fax if needed.

7.4.1.1 Set-up of a communication word between plc and TELE-Network device

With each option that demands a common communication flag word between plc and TELE-Network device, the flag word is set up according to the following scheme and is read by the TELE-Network device every 5 seconds:

Example: FW10 (can be divided into FB10 and FB11)

FW (Flag word) 10



Reference card for the command byte

01h: Start dialling process
After the connect with the called station, a 10h is written back in this register.

02h: Hang up the modem
This command is only possible if the connected TELE-LINK is the caller or if there is no connection by phone at all. The TELE-LINK then disconnects the existing connection. If the command has been executed, a 30h will appear in the status register. In case of an error, a 50h will appear.

03h: Hang up the modem in any case.
This instruction is executed in any case immediately and directly. A 30h will appear in the same register.

Return messages of the TELE-network device in the command byte

10h: Everything OK, fax sent
20h: The number of the desired subscriber entry is invalid
30h: A data module is too small
40h: A Connect is not possible (probably because line is busy)
50h: Error occurred when fax was transmitted

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7.4.1.2 Set up of a communication data module at the FAX-TELE

DW 0 - DW 9: the station-ID of the plc-fax is input as KC
e.g. +49 1122331121

Input only valid ASCII-signs, otherwise blanks up to DW 9!

DW10: Source data module 1
DW11: start data word in this DB
DW12: number of data words in this DB
DW13: source data module 2
DW14: start data word in this DB
DW15: number of data words in this DB
DW16: etc....

The end of the list is recognised if the number 0 (zero) is input in the source data module.

Example: The characters in DB 5 up from DW 4 100 words and in DB 10 up from DW 0 200 words should be sent:

Set-up of the module:
DW0 - DW9 = KC´+4996199999´ (as you like it)
DW 10: 5
DW 11: 4
DW 12: 100
DW 13: 10
DW 14: 0
DW 15: 200
DW 16: 0 (end is recognised)

For S7:

adress	name	type	value
0.0		STRUCT	
+0.0	ID of sender	ARRAY[1..20]	
*1.0		CHAR	´+4´,´99´,´61´,´99´,´99´,´9 ´
+20.0	Source_DB_1	INT	5
+22.0	Source_Start_DW_1	INT	4
+24.0	Source_Count_of_Words1	INT	200
+26.0	Source_DB_2	INT	10
+28.0	Source_Start_DW_2	INT	0
+30.0	Source_Count_of_Words2	INT	400
+32.0	End_ID	INT	0
=34.0	name	END_STRUCT	

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7.4.1.3 Sending a fax with the FAX-TELE-function

If you want to send a fax, you have to define a communication flag word and a communication data module in the TELE-LINK. The communication flag word always has to be an even number in the range of 0, 2, ... 254.

In order to start the transmission and to call the subscriber 4, the plc now gives the following command to the communication flag word (f. ex. FW 10): 0104h.
The remaining data and the actual communication are executed according to the scheme defined in the DB.

Please note, that you have selected the pg-mux-mode for pg-mux (see chapter 6.2.7 *PG-MUX-Mode (Only for PLC-TELE and S5)*)

7.4.2 SMS

7.4.2.1 Messages of the plc sending to a pager

***** Attention *****
Switch PAGER-operation only to „YES“ when you have set and proofed all parameters.

With the PAGER-option you can send from the plc, in the plc defined data, the actual build of flags and DB to a pager. This option is possible in all TELE-Network-Devices with Software Version 4.00 or bigger with S5/S7-Firmware.
You have to look for the speciallities of the different pagers. Following pager are supported with this option:

- SMS to Handy
- Cityruf (alphanumeric)
- Scall
- Skyper
- Quix (alphanumeric)
- ANP Belgacom (numeric and alphanumeric)

For your further information it exists for the sms kommunication different protocolls to the sms data server. In this option are following protocolls implemented: TAP and UCP. The TAP is for D1 and E-Plus. UCP is for D2. Befor you give the TELE-Network-device the command to start this operation, you have to select in the COM-DB the right pager type. In the subscriber database of the TELE-device you have to enter the telefonnumber of the data server of the pager.

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Numbers for Germany

pager type	***Number***	***protocol***	***maximum length of the sending data in characters***
D1 SMS	01712521002	TAP	160
D2 SMS	01722278025	UCP	160
E-Plus SMS	01771167	TAP	160
Cityruf number	01691	special	80
Scall number	01696nnnnnnn (*)	special	15 numeric
Quix (aphanumeric)	016591	special	80
Quix (Numeric)	016592	special	15
Skyper (aphanumeric)	01692nnnnnnn (*)	special	80
ANP Belgacom	0452500001	special	120 / alpha
Proximus	0475161622	UCP	160

(*) n = number of the pager

Please remark, that you have to edit the telefon number of the SCALL and SKYPER complete in the subscriber database of the TELE-device. For the other pagers you have to edit the telefon number in the PAGER-COM-DB.

Please note, if you have problems with sending some sms, proofe at first the telefon number of the central dialing number of your provider. It is possible, that this number has been changed. Please contact your dealer of this device, or the technical hotline of this device.

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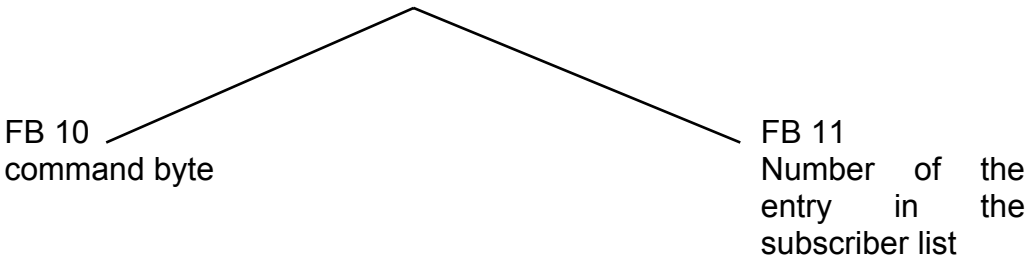
7.4.2.1.1 Setup of the communication word between plc and TELE-Network

With each option that demands a common communication flag word between the plc and the TELE-Network device, the flag word is set up according to the following scheme and is read by the TELE-Network device every 5 seconds.

Example: FW10 (can be divided into FB10 and FB11)

FW 10



Reference card for the command byte

01h: Start dialling process to the pager

Return messages of the TELE-network device in the command byte

20h: The number of the desired subscriber entry is invalid or the subscriber is empty
30h: a DB is too small, or doesn´t exist, or has wrong parameters e.g. the wrong pager number
40h: Connect is not possible (probably because line is busy)
50h: The command to hang up 02h could not be executed
60h: Modem connection with ASCII-subscriber does exist.
70h: A failure is ocured by sending the sms-message
80h: Sms-message is sended correctly
90h: Command doesn´t exist, or is not supported with this option

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7.4.2.1.2 Setup of the communication data module for S5 for PAGER

The minimum length of the PAGER-COM-DB is 142 words
(DW 0 to DW141)

DW 0: Coding of the pager types: Format KF

D1 or E-Plus SMS with TAP	0
D2 SMS with UCP	1
Cityruf alphanumeric	2
Scall numeric	3
Quix alphanumeric	4
Quix numeric	5
Skyper alphanumeric	6
ANP Belgacom	7
Proximus	8

This table of coding the pager types is growing for the future for the different pager types for foreign countries

DW 1 - DW 10: Number for the first pager in KC with an ´E´ at the end. There are only maximum 19 characters possible. For example 0171992282E.
Is the first character an ´E´, so is the following number not guilty. A special opportunity for SMS pager is, that you can with one call send the message to more than on sms-pager. This is only for SMS-Pager, for the other one there is no possibility. If you use the Skyper or Scall where you have edit the pager number in the subscriber database, there is no look for the pager number in this DB.
****** Attention: This entry must exist in every case! ******

DW 11 - DW 20: Number of the second SMS-PAGER (only when 1 or 0 in DW0)

DW 21 - DW 30: Number of the third SMS-PAGER (only when 1 or 0 in DW0)

DW 31 - DW 40: Number of the fourth SMS-PAGER (only when 1 or 0 in DW0)

DW 41 - DW 50: Number of the fifth SMS-PAGER (only when 1 or 0 in DW0)

DW 51 - DW59: not used

DW60 - DW141: Text of the message. Only maximum 160 characters. Pay attention, that when you use pager with numeric data. For e. g. Scall, Quix and so on. This numeric data is only from 20h to 7Fh ascii code available. All the other data is unguilty. The end of the data is a 00h in this DB. You have to look for the different maximum data characters for the different pagers. In this case, your message is sent not correctly. Maximal data characters are 160 characters.

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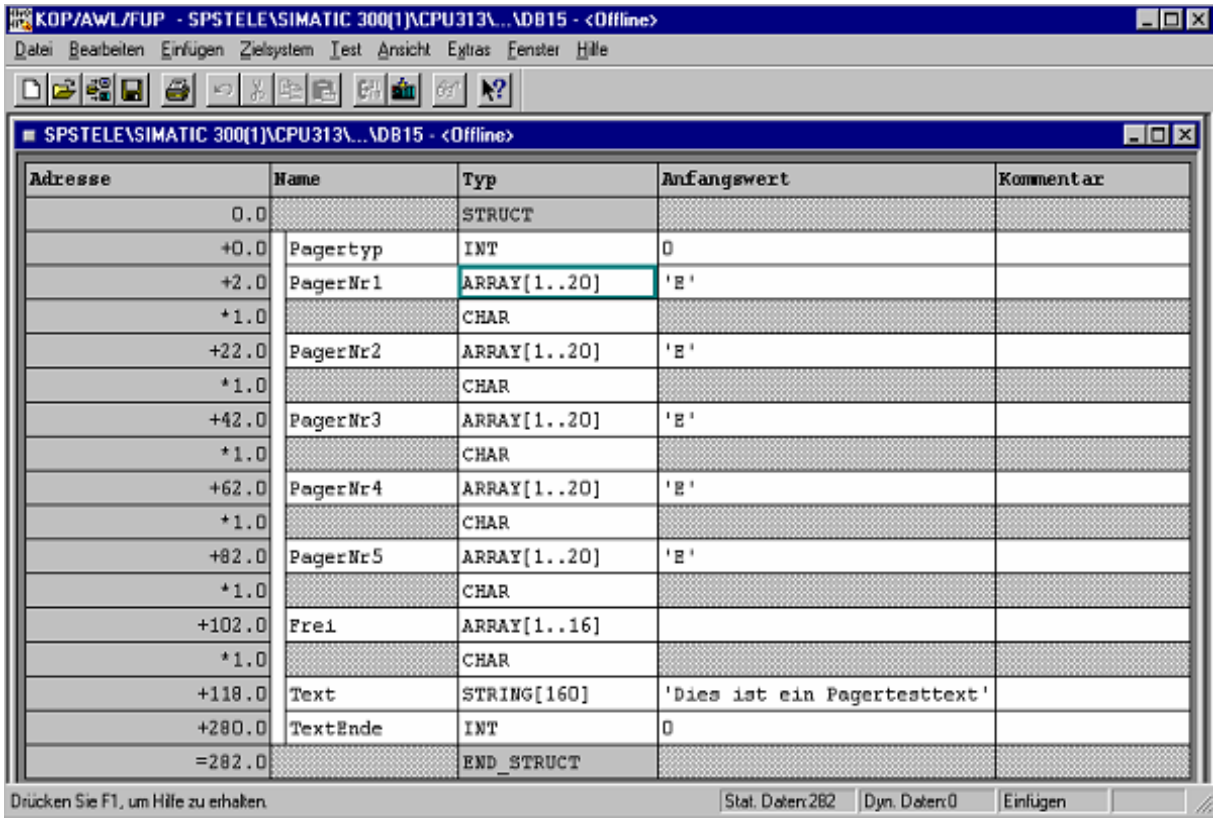
7.4.2.1.3 Setup of the communication data module for S7 for PAGER


KOP/AWL/FUP - SPSTELE\SIMATIC 300(1)\CPU313\...\DB15 - <Offline>
Datei Bearbeiten Einfügen Zielsystem Test Ansicht Extras Fenster Hilfe
SPSTELE\SIMATIC 300(1)\CPU313\...\DB15 - <Offline>
Drücken Sie F1, um Hilfe zu erhalten.
Stat. Daten:282
Dyn. Daten:0
Einfügen

Adresse	Name	Typ	Anfangswert	Kommentar
0.0		STRUCT		
+0.0	Pagertyp	INT	0	
+2.0	PagerNr1	ARRAY[1..20]	'E'	
*1.0		CHAR		
+22.0	PagerNr2	ARRAY[1..20]	'E'	
*1.0		CHAR		
+42.0	PagerNr3	ARRAY[1..20]	'E'	
*1.0		CHAR		
+62.0	PagerNr4	ARRAY[1..20]	'E'	
*1.0		CHAR		
+82.0	PagerNr5	ARRAY[1..20]	'E'	
*1.0		CHAR		
+102.0	Frei	ARRAY[1..16]		
*1.0		CHAR		
+118.0	Text	STRING[160]	'Dies ist ein Pagertesttext'	
+280.0	TextEnde	INT	0	
=282.0		END_STRUCT		

Pay attention, that you finish the message text at the end with a 0. The type string is used for the text, because is so easier to edit. TELE-LINK / PROF need for the end detection a 00h.

Please note, that you have selected the pg-mux-mode for pg-mux (see chapter 6.2.7 PG-MUX-Mode (Only for PLC-TELE and S5))

7.4.2.1.4 Sending a message to a PAGER

After you have correctly defined the PAGER-COM-DB in the plc, now you can give the TELE-Network-device the commnd for dial. For this you write into the communication flag word the 01h for dialing. The TELE-Network-device gives the plc after sending the message the status back. The status for sending ok or sending with mistake.

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7.5 Serial Extension (Direct-Mode)

You can select this mode in order to realise a data transmission that does not correspond to a communication protocol specific for controls as for example the AS511-protocol of Siemens-plcs.
After the TELE-Network devices have built up a connection, the direct / transparent mode can be turned on. There is now a direct coupling between the PG-socket of the PG-TELE and the PG-socket of the PLC-TELE: This means that data that enters the PG-TELE is released unchecked at the PLC-TELE. In this way, you can transfer files from one PC to another, configure a connected OP, or simply transfer and execute the protocol of another control which is not supported by the TELE-Network devices.

The direct mode can only be activated from the PG-TELE! Moreover, it is an unprotected transmitting medium without special checking. Because of that it is a plain modem route with modem security (correction of errors according to modem standards). We cannot take any guarantee for run time errors.

7.5.1 Source-Com

With this menu item, the device is configured for the so-called transparent mode. The TELE-Network device is adjusted to parameters that are specifically made for transmission:

- PG or PLC (-socket) connection (input) from the dialling TELE-LINK
- Baud rate 300, 1200, 1800, 2400, 4800, 9600, 19200, 38400 Baud
- Number of data bits 5 to 8 bits
- Parity N (none), E (even), O (odd)
- Number of stop bits 1, 1.5 and 2 bits

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7.5.2 Dest.-Com

In this menu item, the device is configured for the so-called transparent mode. The TELE-Network device is adjusted to parameters that are specifically made for transmission:

- PG -or PLC (-socket) connection (input) from the TELE-LINK that is called
- Baud rate 300, 1200, 1800, 2400, 4800, 9600, 19200, 38400 Baud
- Number of data bits 5 to 8 bits
- Parity N (none), E (even), O (odd)
- Number of stop bits 1, 1.5 and 2 bits

7.5.3 Direct Mode ON

If there is a connection between PG-TELE and PLC-TELE, the direct mode can be turned on with this menu item. This mode is valid until the transmission is disconnected by using the LEFT key.

7.5.4 Direct Mode On with HW

If there is a connection between PG-TELE and PLC-TELE, the direct mode can be turned on with this menu item. This mode is valid until the transmission is disconnected by using the cursor-left key. With this mode, there is a hand shaked connection between the plc-tele and the device, you want to communicate. Here is the DTR and DSR line used.

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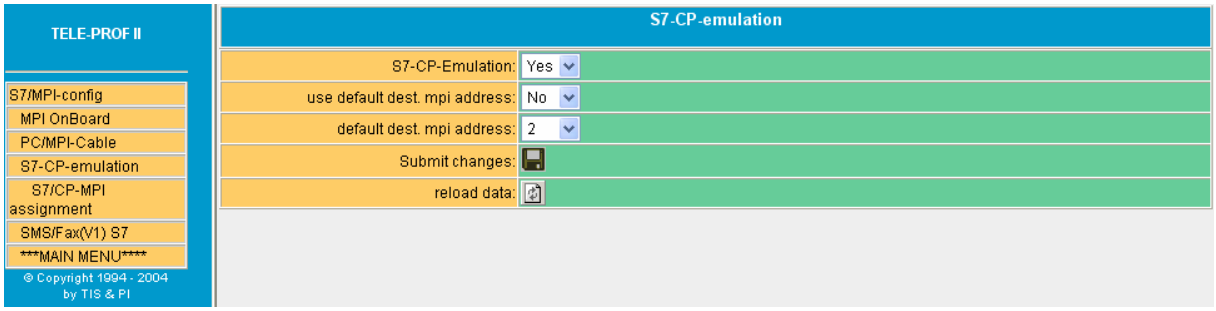
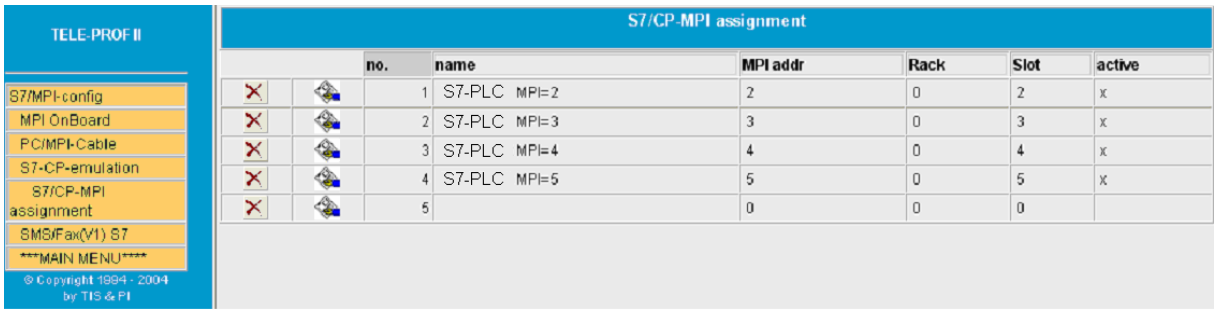
7.6 S7-CP-mode emulation

Since version V7.00 is the Tele-Prof-II able to simulate the communication to the S7-plc above a CP341-1. The configuration is able in the integrated web-browser menu. The menu name is **S7/MPI-Konfig.**



Switch the **S7-CP-Emulation** to **"yes"**. If you want to reach always one CP, switch the **"use default dest. mpi address"** to **"yes"** and define the default dest. mpi address. So all communication accesses for e.g. from WinCC will be send to this defined plc, whether which rack- or slot-number you have configured.
Would you communicate to many different plcs on this mpi-bus you have to switch **"use default dest. mpi address"** to **"no"**.
So, you will be able to communicate up to 20 to the mpi/profibus connected plcs per TCP/IP for e.g. with WinCC. The access will be realised with the ethernet-ip-address or a dial-up-connection and the rack- respective slot-number.
For the data exchange between the S7 plc and pc above TCP/IP with CP343-1 or CP443-1 the user has to make the same definition for e.g. for WinCC or other applications with ip-address of the CP and rack- and slot-number.
The Tele-Prof-II is connected to the mpi- or profibus and is so not able to communicate with rack- or slot-number. There fore, for this is in the Tele-Prof-II a S7-CP-MPI assignment table implemented. So with this table is a plc reachable with her mpi-address. So you refer to a particular rack- or slot-number the mpi-address.
For example:
If in your mpibus are 4 plcs with the addresses 2, 3, 4 and 5 and you will communicate with WinCC above TCP/IP to this plcs, you have to configure following:



So, you have to configure in WinCC the addresses, for e.g. plc with mpi-address 5: IP-address: 192.168.1.54, rack-number: 0, slot-number: 5

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7.7 Possible Connections for S7 for TP-II

7.7.1 S7 connected to MPI/PROFIBUS-port of PLC-TELE-S7-300/400

7.7.1.1 PC connected to PG-TELE via RS232 to PG-V24-port

Office-side:

device-side	PG-TELE
IP-address	192.168.1.200
use ethernet subnetmask	yes
Subnet-mask	255.255.255.0
Isdn ip	172.16.0.3
analogue ip	172.16.0.4
router mode	yes

machine-side:

device-side	PLC-S7-300/400
IP-address	192.168.2.200
use ethernet subnetmask	yes
Subnet-mask	255.255.255.0
Isdn ip	172.16.0.1
analogue ip	172.16.0.2
router mode	yes
on board mpi-address	0 (for e.g. is standard for a programming device)

note:

for Step7-software:	
PG/PD-Port	PC-adapter [MPI] or PC-adapter [Profibus] Properties : correct COM-PORT of PC

7.7.1.2 PC connected to PG-TELE via ethernet to the ethernet-port

Office-side:

device-side	PG-TELE
IP-address	192.168.1.200
use ethernet subnetmask	yes
Subnet-mask	255.255.255.0
Isdn ip	172.16.0.3
analogue ip	172.16.0.4
router mode	yes

machine-side:

device-side	PLC-S7-300/400
IP-address	192.168.2.200
use ethernet subnetmask	yes
Subnet-mask	255.255.255.0
Isdn ip	172.16.0.1
analogue ip	172.16.0.2
router mode	yes
on board mpi-address	1 (for e.g.)

note:

for PLC-TELE:	
S7-CP-emulation	yes
Use default dest. mpi address	yes
Default dest. mpi-address	< here select the number of the direct connected plc >
PLC MPI-Addr. For FAX/SMS-Data	< here select the number of the direct connected plc >

For Step7-software:
Work with your project, use inside the project a virtual PLC and a virtual CP. You can only work with an existing project of the PLC!
The virtual PLC must have the mpi-address configured in the menu “item on board mpi-address” of the web interface of the TP-II. Not possible for PC-adapter [MPI] or PC-adapter [Profibus]

7.7.2 S7 connected to ethernet-port of PLC-TELE-S7-300/400

7.7.2.1 PC connected to PG-TELE via RS232 to PG-V24-port

For this situation there will be no reason to solve this communication.

7.7.2.2 PC connected to PG-TELE via ethernet to the ethernet-port

Office-side:

device-side	PG-TELE
IP-address	192.168.1.200
use ethernet subnetmask	yes
Subnet-mask	255.255.255.0
Isdn ip	172.16.0.3
analogue ip	172.16.0.4
router mode	yes

machine-side:

device-side	PLC-S7-300/400
IP-address	192.168.2.200
use ethernet subnetmask	yes
Subnet-mask	255.255.255.0
Isdn ip	172.16.0.1
analogue ip	172.16.0.2
router mode	yes
on board mpi-address	0 (for e.g. is standard for a programming device)

note:
For Step7-software:
Work with your project of the plc. Please note the correct ip-addresses! Not possible for PC-adapter [MPI] or PC-adapter [Profibus]

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8 Special Functions

8.1 RECALL mode

In order to optimise or save phone charges, for example for longer and often international calls, you can receive recalls from the TELE-Network device of your interlocutor. After the firm or the technician there has reported a disturbance of the installation, you call there with the TELE-Network device and cause a return call. In this way, the phone costs are at the customer´s expense.
Please make the modifications described in the following chapters in order to be able to work with the return call mode.

8.1.1 PLC-TELE

On the PLC-TELE, you have to config following:

Count of Rings:	minimum 1 or bigger
Dial Mode:	Tone or Pulse
Extension:	Yes or No
Outline Code:	0,1,2,3,4,5,6,7,8,9,!,",",/,>,#,X,W,*
Recall Mode:	YES

8.1.2 PG-TELE

In the PG-TELE, you have to configure following:

Count of Rings:	minimum 1 or bigger
Recall Number:	Own telefon number of this tele-network-device, if you want a Recall from other areas, only with precall number

In your Edit Subscriber, you you have configured the telefon number, you want the recall, you just have to select the baudrate beginning with the Rxxx. So for example the R144, this means, you want a recall with 144000 baud.
As soon as the Baud rate with the "R" has been activated, a new input field will be shown after the input of the phone number (RC-PNr.) This return call - prefix number stands for the international code of the PG-TELE (for Germany, the international code is 0049). If the return call is a national one, just confirm with ENTER (field remains empty). If you have input a RC-PNr., you must not delete the ZERO of the prefix of the return call number. This happens automatically when the TELE-Network device dials. This means that the return call number always remains completely in the entry.

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8.1.3 Use recall-mode

In order to start the return call, select (after having made the aforementioned adjustments) the respective subscriber in the menu item “subscriber dialling“. As usual, you start the dialling with ENTER and in this way you also start the return call.
The TELE-Network devices communicate with each other, exchange the return call numbers, hang up immediately and then the PLC-TELE calls back the other TELE-Network device within a minute. If there is no return call, please check whether the adjustments in the TELE-Network device (PG-TELE and PLC-TELE) are correct and whether the device that calls back had got a line.

8.2 Operation of several plcs at one TELE-Network device

If you want to attend several automation devices that are not networked, there are two possibilities to connect them to a TELE-Network device.

8.2.1 Operation with Siemens MUX-757

Connect the PLC´s in a star-shaped way with a MUX-757 of Siemens and connect the latter to a PLC-TELE. In this way, you can programme up to maximally 8 plc controls via one telephone connection. Turn the TELE-Network device to the operation mode “KOR/MUX“ (see chapter 6.2.7 *PG-MUX-Mode (Only for PLC-TELE and S5)*).

8.2.2 Operation with intelligent Bus-terminal IBX

With the intelligent Bus-system IBX-terminal up to 30 plcs can be contacted. At the individual IBX-terminals, set the PG-number of the respective control via the DIP switch that is located at top. The terminals are connected with each other in a bus-shaped way via a 4wire RS485-line. Please note: Use a 2 x 2 x 0,25 cable, single shielded. The shield has to be connected both ways.
With your S5-software you contact with both variants the desired AG as usual via the PG-BUS (Bus/path calling). Switch the TELE-Network device to the operation mode “KOR/MUX“ (see chapter 6.2.7 *PG-MUX-Mode (Only for PLC-TELE and S5)*).

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8.3 Operation of several plcs via the H1-Bus

It is no problem to attend a complete H1-network.
With an additional software option, it is possible to configure the PLC-TELE in such a way that a “local AG“ can be connected at the PLC-socket of the PLC-TELE and that a CP can be connected at the PG-socket. After the connection set-up, the programmer decides at the PG-TELE whether he/she wants to programme at the PLC or at the CP. With the Bus-calling of his/her S5-software, he/she can reach and programme all the SIMATIC-S5-PLCs that are connected to the H1-Bus.

With the menu item “Special items“ and the submenu item “To the PG/PLC-interface“, it is decided at the PG-TELE whether the communication at the PLC-TELE is via the PLC-socket or the PG-socket.

Possible adjustments:

- Connect PG-socket with PLC-socket normal setting
- Connect PG-socket with PG-socket 2nd plc or switch to CP-connection

8.4 Operation of several plcs via the L1-Bus

It is no problem to attend a complete L1-network.
With an additional software option, it is possible to configure the PLC-TELE in such a way that a “local PLC“ can be connected at the PLC-socket of the PLC-TELE and that a CP can be connected at the PG-socket. After the connection set-up, the programmer decides at the PG-TELE whether he/she wants to programme at the PLC or at the CP. With the Bus-calling of his/her S5-software, he/she can reach and programme all the SIMATIC-S5-PLCs that are connected to the L1-Bus.

With the menu item “Special items“ and the submenu item “To the PG/PLC-interface“, it is decided at the PG-TELE whether the communication at the PLC-TELE is via the PLC-socket or the PG-socket.

Possible adjustments:

- Connect PG-socket with PLC-socket normal setting
- Connect PG-socket with PG-socket 2nd plc or switch to CP-connection

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8.5 Operation of several plcs via the L2-Bus

It is no problem to attend a complete L2-network.
With an additional software option, it is possible to configure the PLC-TELE in such a way that a “local PLC“ can be connected at the PLC-socket of the PLC-TELE and that a CP143 or a CP1430 (H1) can be connected at the PG-socket. After the connection set-up, the programmer decides at the PG-TELE whether he/she wants to programme at the PLC or at the CP. With the Bus-calling of his/her S5-software, he/she can reach and programme all the SIMATIC-S5-PLCs that are connected to the L2-Bus.

With the menu item “Special items“ and the submenu item “To the PG/PLC-interface“, it is decided at the PG-TELE whether the communication at the PLC-TELE is via the PLC-socket or the PG-socket.

Possible adjustments:

- Connect PG-socket with PLC-socket — normal setting
- Connect PG-socket with PG-socket — 2nd plc or switch to CP-connection

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8.6 Send data from the plc to a modem subscriber

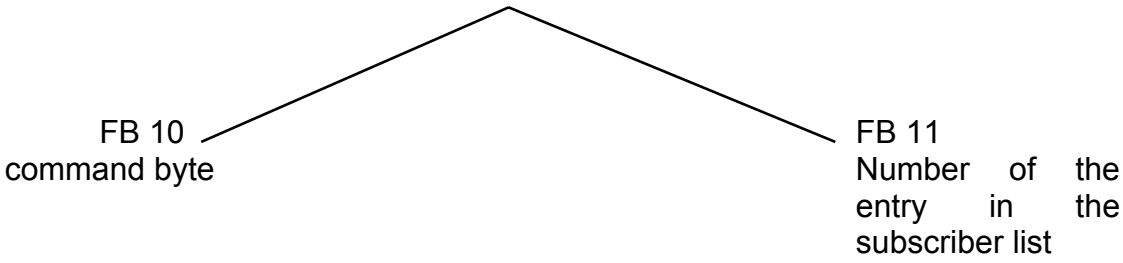
The plc can exchange data with a so-called ASCII-subscriber via data modules. The ASCII-subscriber is a normal modem. Only V.42-BIS connections are allowed.
The caller might be either the ASCII-subscriber or the plc or it can be started via the TELE-LINK.

8.6.1 Setup of the communication word between plc and TELE-Network

With each option that demands a common communication flag word between the plc and the TELE-Network device, the flag word is set up according to the following scheme and is read by the TELE-Network device every 5 seconds:

Example: FW10 (can be divided into FB10 and FB11)

FW 10



Reference card for the command byte

01h: Start dialling process
After the connect with the opposite position, a 10h is written back in this register. When calling a ASCII-TELE-LINK, you receive a 60h at the latest 20 seconds after both modems have built up a connection. Another possibility is that the called ASCII-subscriber already has a line that he wants to send to the plc before those 20 seconds are over. If the plc wants to send immediately, you have to call with 04h.

02h: Hang up the modem
This command is only possible if the connected TELE-LINK is the caller or if there is no connection by phone at all. The TELE-LINK then disconnects the existing connection. If the command has been executed, a 30h will appear in the commando register. In case of an error, a 50h will be appear.

03h: Hang up the modem in any case.
This instruction is executed in any case immediately and directly. A 30h will appear in the same register.

04h: 04h: An ASCII-subscriber is called. If there is a connect afterwards, then a 60h is sent to the plc for the connect with the ASCII-subscriber. Advantage: The plc can set down the ASCII-commands immediately after the connect.

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If there is a TELE-LINK (PLC or PG) at the other end, those cannot communicate with each other. Only use this if you are sure that the subscriber definitely is a ASCII-subscriber. Otherwise, use 01h.

Return messages of the TELE-network device in the command byte

10h: Modem connection with TELE-LINK (PLC-TELE or PG-TELE) exists
20h: The number of the desired subscriber entry is invalid
30h: Modem connection does not exist anymore, e.g. after hanging up or if the partner has hung up
40h: Connect is not possible (probably because line is busy)
50h: The command to hang up could not be executed
60h: Modem connection with ASCII-subscriber does not exist.

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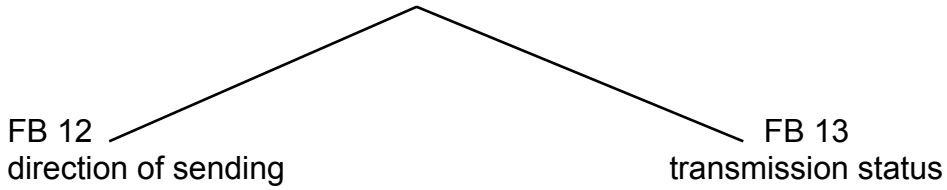
8.6.2 Setup of the ASCII-TELE-flag

Example: FW 12 (can be divided into FB 12 and FB 13)

FW 12



Direction of sending

0100H in the flag word (absolutely 00 in the LOW-byte also with PLC-TELE in order to delete the status; otherwise, the TELE-LINK does not accept the command) ➔ send the data module that was described in the communication DB. The number of the bytes that have to be sent can be found in the communication DB.

0200H The plc is ready to receive data. This means that the received lines are only written in the plc if this command is there. Only one line including CR is written. After that, TELE inputs into the command flag 0AH which means - 020AH. This means for the plc that data has been received. After this data has been processed, 0200H can be input again. If there are still lines in the TELE, these are sent to the plc. The following is then in the target

DW: Number of the received bytes in KF-format
DW: from here in KC the signs

Transmission status

01h: command is ready without mistakes
02h: command is being executed, but you have to check for TIMEOUT, the command should be executed after 45 seconds
03h: source module does not exist or is too short
04h: target module does not exist or is too short
05h: mistake; the command has to be repeated
06h: configuration DM does not exist
07h: parameter fault
08h: the partner device is not an ASCII-subscriber

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8.6.3 Setup of the communication data module at the ASCII-TELE

DW0: KC = data type of the source (at the moment, only DB possible)
‘DB’ data module
‘IB’ input byte
DW1: KF = source DB number
DW2: KF = initial address of the source sector = StartDWNr
DW3: KF = number of words
DW4: KC = Data type of the target (at the moment only DB possible)
‘DB’ data module
‘IB’ input byte
DW5: KF = target-DB number
DW6: KF = initial address of the target sector = StartDWNr
DW7: KF = number of words

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8.6.4 Send data with the ASCII-option

The following criteria have to be fulfilled:

(the ASCII-subscriber is called “AS“ in the following)

- The AS does not send 0AH as 1st sign to the plc
- All transmissions form the AS have to be finished with CR = 13dez
- TELE-Network device saves maximally 3200 signs from the ASCII-subscriber in the cache (also several lines)
- One line can be maximally 510 bytes long (including CR)

A communication flag word as well as a communication data module have to be arranged here (compare to PLC-TELE). The source area is the area that is sent to the AS. The AS on the other hand sends to the target area. It has to be noted that the target area marks the number of the received bytes in the first word. (note: bytes!) The TELE-LINK does not write the number of the received bytes in the configuration DB but in the 1st word of the target area. When sending from the plc to the AS, the number of the bytes that are to be send (not WORDS as with the PLC-TELE) is taken over from the configuration DM. For the status report the same values as with the PLC-TELE are valid.

If you want to send data from the plc to an ASCII-subscriber or if you want to fetch data, you have to define a communication flag word, a communication data module and the ASCII-TELE-flag in the TELE-LINK. The communication flag word and the ASCII-TELE-flag always have to be an even number (0, 2, 4, 6, ..., 254).

In order to start the transmission and to call the subscriber 4, the plc now gives the following command to the communication flag word (f. ex. FW 10): 0104h.
The remaining data and the actual communication are executed according to the scheme defined in the DM.

Please note, that you have selected the pg-mux-mode for pg-mux (see chapter 6.2.7 PG-MUX-Mode (Only for PLC-TELE and S5))

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8.7 Communication with a mailbox (modem)

With this option now you can communicate with the tele-network-device from your pg/pc above the telefon line into a mailbox (esp. the modem). You only have to configure your terminal programm in your pg/pc with following parameters:

Baudrate 19200 Baud, 8 data-bit, 1 stop-bit, no parity

Handshakes like following:

TELE-PROFessional-II: RTS/CTS on V24-Connctor

At next, you select the subscriber you want to dial, but now you need this baudrate like M144 or M96 and so on. After the connect you can work with your pc and your terminal programm, like the modem is build in in your pc.

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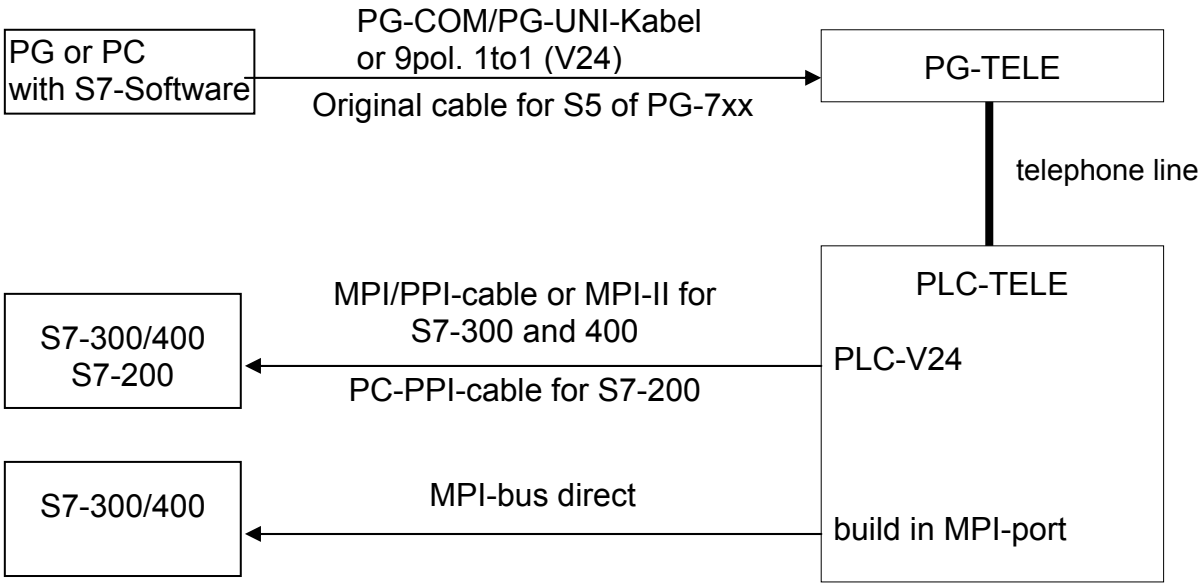
8.8 Communication with an S7-PLC

This device, which is on the plc side, must be configured in the menu item Konfiguration Device Type as PLC-S7 300/400. If you use the S7-200, you just have to change the device type as PLC-S7 200 9K6 or PLC-S7 200 19K2. For the PG-TELE you don´t have to change anything, because the PG-TELE recognices the plc type, wether its S5 or S7. These schematic is for MPI and also for Profibus-communication. You only have to note, that you will use the correct interface cable for the used baudrates.

If you are using a S7-200 PLC, you should activate in the PG-TELE in the menu-item Speciall the "S7-200 ON" item. After connecting the both modems together, you should do this. Now you can work with the programmingtool MicroWin. It is better for the communication, you configure your device driver PPI-Cable with the modemconnection. With this feature, you get longer timeouts. For the modem device you can use the Bausch Induline IL 14K4 with the normal standard parameters. The pc is connected to the PG-TELE PG-V24-port with a straight cable 1to1 pin.

Connection scheme:



The baudrate of the serial communication is able up to 115200 baud. You should only recognize that cables like PG-COM/PG-UNI are not able to drive this baudrate. For a communication with TTY there is only maximum 38400 baud possible. If you connect direct RS232, then you can drive the 115200 baud. If you use Siemens Step7-software, you should use the tool "MPI-Speed" for to drive this higher baudrates.

A connection in the office to the build in MPI-port is in the moment not possible. You should use the driver „PC-Adapter" with the serial baudrate of 19200 up to 115200 baud.

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8.9 Communication with external handy or modem

The TELE-PROFessional-II can be driven instead of analogue or digital telefon system with an external modem, terminal box or with a handy.

After, you have connected the handy/modem to the device, you should not configurate only the baud rate of the serial communication, you must activate this in the TELE-PROFessional-II, too.

So, you must activate this in the menu item configuration ➔ telephone ➔ ext. modem. Then, restart the device, so this option will be active.

8.9.1 Connecting a handy to a „PG-TELE“

The handy or the modem is connected to the port PLC-V24 with the same cable you use for connecting to a PC. Therefor, this port has the same pinning like a pc, you don’t need a special adapter for connecting it. So, with the same cable connected to a PC, you are able to test the communication or the configuration.
The with this test detected parameter should be configured in the menu item configuration ➔ telephone ➔ ext.modem baud.

8.9.2 Connecting a handy to a „PLC-TELE S5“

The handy or the modem is connected to the port PLC-V24 with the same cable you use for connecting to a PC. Therefor, this port has the same pinning like a pc, you don’t need a special adapter for connecting it. So, with the same cable connected to a PC, you are able to test the communication or the configuration.
The with this test detected parameter should be configured in the menu item configuration ➔ telephone ➔ ext.modem baud.
The S5-plc is connected with a 15pin cable male ⇔ male to the PG-TTY-port of the TELE-PROFessional-II. This cable is not a 15pin 1to1-cable, it has a special pinnnng, name and article number. The name is “CP-KABEL” and the article number is 9359-90.
After, you got a telephone connect to this device, you don’t have to care, that the plc is not connect to the plc-port, this makes the device itself.

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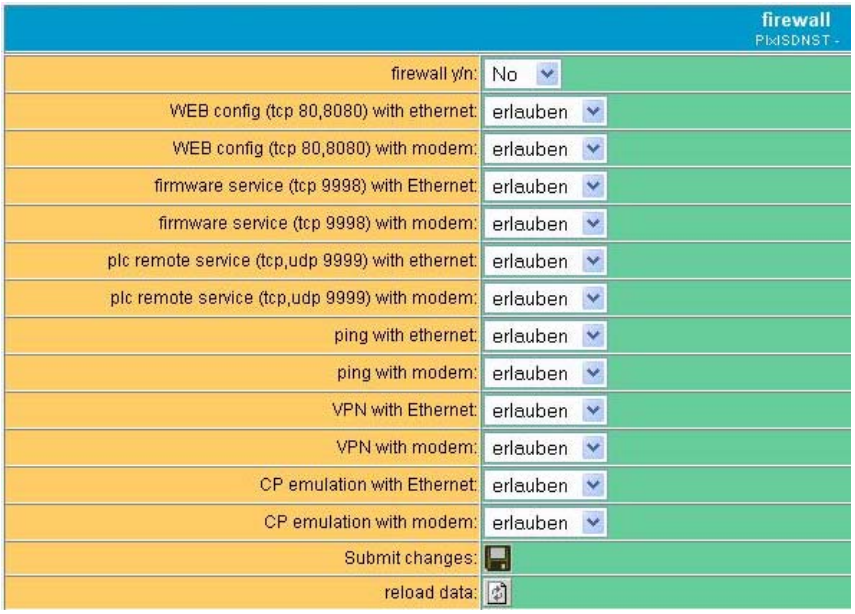
8.9.3 Connecting a handy to a „PLC-TELE S7-300/400“

The handy or the modem is connected to the port PLC-V24 with the same cable you use for connecting to a PC. Therefor, this port has the same pinning like a pc, you don’t need a special adapter for connecting it. So, with the same cable connected to a PC, you are able to test the communication or the configuration.
The with this test detected parameter should be configured in the menu item configuration ➔ telephone ➔ ext.modem baud.
The S7-plc is connected here to the build in mpi-port. Only so is the communication to the plc and a handy communication possible.

8.10 Firewall

The TELE-PROFessional II has an integrated Firewall to block undesirable access from outside.
This can be switched on or off under *Configuration → Firewall*

Via Web-Server (*Netzwork → Firewall*) you can configure further options:



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8.11 HMI-Module

With the HMI-report module you can send PLC-event-depending SMS (Pager-Messages) to practically as many recipients as you want without any programming effort. The system classifies the messages to the corresponding recipient automatically and sends the message via correct provider.

By sending SMS additional costs can come up. Please inform yourself at your provider.

That the HMI-Module can work correctly you must set a few basical settings.

Following points have to be setted up:

- Pagerprovider
- Pagerrecipients
- PLC-Connections
- PLC-Variables
- Normierungen (optional)
- Reports
- Activate base setting HMI-Option

Even the HMI-Module is secured by the Access protection via WEB-Browser. The necessary rights are given by the corresponding points.

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Entering the pager provider

Access rights	Level
Write	Superuser
Read / View	U2

Enter a statement under name which is expressive for you. The phone-number and the protocol-type you can find out from your provider. In the column Baudrate you can choose the connection of your choice (ISDN or Analog). The entry user is for purpose of sending e-mail or for SMS-Provider, which offer an Internet- or PPP-access.

Here a few important Providers:

Provider	Number	Protocol
T-D1	0171/2521001	TAP
D2 Vodaphone	0172/2278025	UCP
E-Plus SMS	0177-1167	TAP

Entering the Pagerrecipients

Access rights	Level
Write	Superuser
Read / View	U2

In the next step enter the recipients of the short messages. Usually these are handy-numbers of the recipients.

- The name is freely selectable again. Phone number is the handy number of the recipient.

- In the column provider you can assign a provider to the recipient

- The columns G0 – G9 stand for report groups. There are total 10 report groups. Each recipient can belong to several report groups. Below you can assign several report groups for each group similar like here. So you can spread one message to the relevant recipients without any problem.

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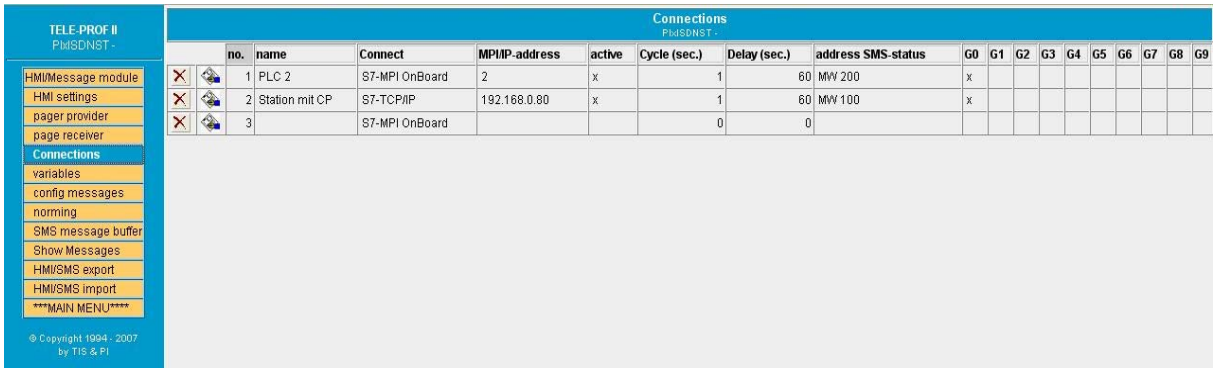
How do the messages come from the PLC to the handy ?

For the PLC-access connections are required. For the SIMATIC S7 currently the connections are supported via MPI or TCP/IP. These connections should be projected in the following dialog.

Projecting the PLC-Connections

Access rights	Level
Write	Superuser
Read / View	U2


TELE-PROF II
PIxISDNST -
HMI/Message module
HMI settings
pager provider
page receiver
Connections
variables
config messages
norming
SMS message buffer
Show Messages
HMI/SMS export
HMI/SMS import
MAIN MENU*
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Connections
PIxISDNST -
no. name Connect MPI/IP-address active Cycle (sec.) Delay (sec.) address SMS-status G0 G1 G2 G3 G4 G5 G6 G7 G8 G9
1 PLC 2 S7-MPI OnBoard 2 x 1 60 MW 200 x
2 Station mit CP S7-TCP/IP 192.168.0.80 x 1 60 MW 100 x
3 S7-MPI OnBoard 0 0

- The column “Name” is provided for an own notation.

- „Connect“ is the connection type to the PLC (here MPI or TCP/IP).

- In the column “active” you can define whether to communicate with the PLC or not

- „Cycle“ defines the time periode after which the next communication to the PLC should start.

- “Address SMS-status“ is for the feedback of the state of the HMI-Module. If you want to control communication state and the SMS-shipment of the PLC, enter the address of one “word”, e.g. data block or flag. TeleProf II will then write the maximum number of polling attempts for queued messages to the low byte in every communication cycle. If the number 254 is exceeded so the number 254 is set every time. If the number of polling attempts is > 0, so the drop of a message has failed. Like this the PLC can control the SMS-shipment. Now it should be controlled whether TeleProf II is communicating with the PLC. This can happen very easily. Overwrite the Counterbyte of your PLC regularly with 0xFF. After the defined cycle time there should be another value then 0xFF. But rate this time generously, because the cycle can shift if there is a communicationproblem with other controllers. The high byte is reserved for later extensions. Currently it is overwritten with “0”. Examle: If you use FW 200, then FB201 is the counter and FB200 is set to 0.

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Projecting the Variables

Access rights	Level
Write	Superuser
Read / View	U2

Enter the desired variables, which should be shown or processed.

In the following table you can find the usage of each column

Column	Usage
Name	Own notation
Connection	Assignment of a variable to a PLC connection
Address	The underlying address in the PLC after following rules:

Data range				Data type
Input	**Output**	**Flag**	**Data block**	
E1.0 , I 1.0	A1.0 , Q 1.0	M 10.1	DB1.DBX 1.0	Bit (Boolean)
EB 1, IB 1	AB 4, QB, 4	FB 20	DB2.DBB 20	BYTE
EW 4, IW 4	AW 6, QW 6	FW 100	DB4.DBW 0	WORD
ED 4, ID 4	AD 6, QD 6	FD 100	DB4.DBD 10	DWORD

Daten range				Data type
Timer	**Counter**			
T1	------			Timer
-----	Z1, C1			Counter

Data type	Choice of the data type for the correct conversion: Boolean (Bit) unsigned int (Word without sign) signed int (Word with sign) DWORD (Double Word without Sign) signed DWORD (Double Word with Sign) real (Floating-point-number)

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The normings

For the correct processing and displaying of the variable maybe a conversion is necessary.
This conversion can happen with normings. You can define the necessary conversions here and later you can assign them to a message. As normings usually happens frequently it is meaningful to manage them centrally.

Access rights	Level
Write	Superuser
Read / View	Superuser

TELE-PROF II
PIMSDNST -
HMI/Message module
HMI settings
pager provider
page receiver
Connections
variables
config messages
norming
SMS message buffer
Show Messages
HMI/SMS export
HMI/SMS import
MAIN MENU*
© Copyright 1994 - 2007 by TIS & PI
norming
PIMSDNST -
no. name norming unit /state plc value 1 HMI value 1 plc value 2 HMI value 2
1 On/Off text 0:O N 1:O F F 0.00 0.00 0.00 0.00
2 Window state text 0:opened 1:closed 0.00 0.00 0.00 0.00
3 Degrees C° linear °C 0.00 -256.00 2048.00 256.00
4 3 steps text 0:step0 1:step1 2:step2 0.00 0.00 0.00 0.00
5 linear 0.00 0.00 0.00 0.00

The meaning of each column „norming“:

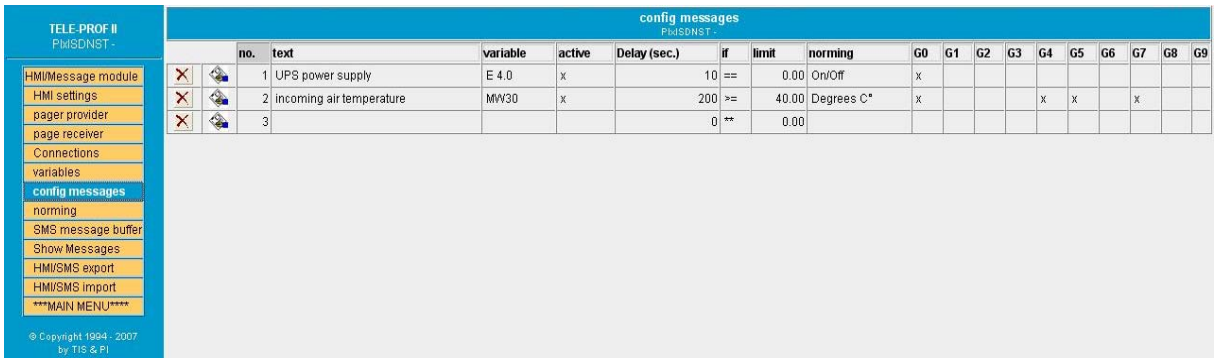
Column	Usage
Name	Own notation
Norming	Currently there are two supported norming types, either “linear” or “text” “linear“ means the value from the PLC has to be converted. In this case the fields “plc value 1”, “HMI value 1”, “plc value 2”, “HMI value 2” are “texts”, which means that they want to assign stateful texts to the PLC-values. This can for example be the state of a multistage actuation.
unit /state	At the norming „linear“ the text for sthe scale unit will stand here. (e.g. °C, %, pieces, …) At the norming „text“ the states are listed here with the following syntax: <comparison><value>:<text> For each state a new line has to be entered. <comparison> is optional. If <comparison> is not entered the values will be compared to equality. Example for actuation: 0:OFF 1:step1 2:step2 For comparisions the following states can be defined aswell. A temerature should be observed. A text should be printed out whether the value is within limit or exceeded the limit. The value is within limit as long as it is between 20 and 30. This looks like following: >=20: normal <=30: normal

	<20: too low >30: too high >60: far too high As number enter the values which result from the conversion of the fields “plc value 1”, “HMI value 1”, “plc value 2”, “HMI value 2”.
Conversion	For displaying the conversion of the numeric PLC-value a physical value an assignement of the PLC-value and the HMI-value is necessary. The displayed value is calculated like: w = m * x + t; w = the displayed value m = (HMI-value2 – HMI-value1)/(PLC-value2 – PLC-value1) t = (HMI-value1 – m * PLC-value1) x = the current PLC-value see an example with the PLC-value 0 – 2048 correspond -256 to +256 in the display
PLC-value1	PLC-value, which corresponds the HMI-value1. (0)
HMI-value 1	HMI-value, which corresponds the PLC-value1. (-256)
PLC-value 2	PLC-value, which corresponds the HMI-value2. (2048)
HMI-value 2	HMI-value, which corresponds the PLC-value2. (256)

Configure messages

Access rights	**Level**
Write	Superuser
Read / View	U2

The actual messages are configured seperately. The relation between variable, norming and report groups can be defined there, whereof the actual message will result from.
The order of the messages is resolved by input. In later versions it can also be changed.


TELE-PROF II
PIWISDNST -
HMI/Message module
HMI settings
pager provider
page receiver
Connections
variables
config messages
norming
SMS message buffer
Show Messages
HMI/SMS export
HMI/SMS import
MAIN MENU*
© Copyright 1994 - 2007 by TIS & PI
config messages
PIWISDNST -
no. text variable active Delay (sec.) if limit norming G0 G1 G2 G3 G4 G5 G6 G7 G8 G9
1 UPS power supply E 4.0 x 10 == 0.00 On/Off x
2 incoming air temperature MW30 x 200 >= 40.00 Degrees C° x x x x
3 0 ** 0.00

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The meaning of each column „messages“:

Column	**Usage**
Text	Own notation
Variable	Here you can assign a variable to the message. If no variable is assigned only the text will be displayed.
Active	If the cross is set, the message is active and worked up. Without cross the variable will not be worked up.
Delay	The time, after which the message is sent out when the limit is exceeded in seconds. So a measured value can be debounced.
If	The requirement / comparative operation to realize a limit transgression or a report condition. Possible comparisions: ==, >=, <= ,<>, ** means no limit observation, only displaying
G0 – G9	The assignement to each report group. So the particular message is assigned to a group of recipients.

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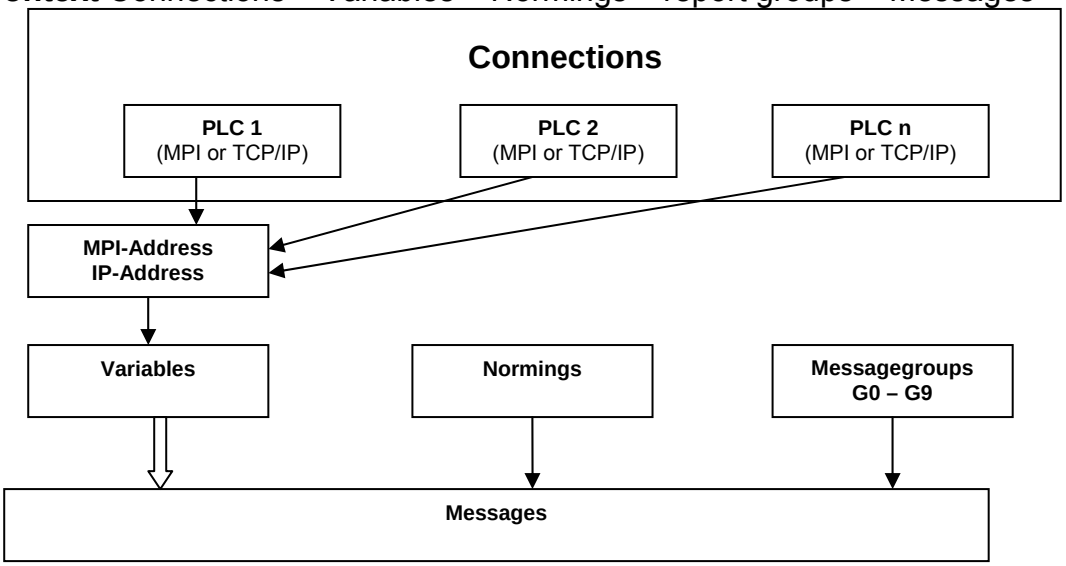
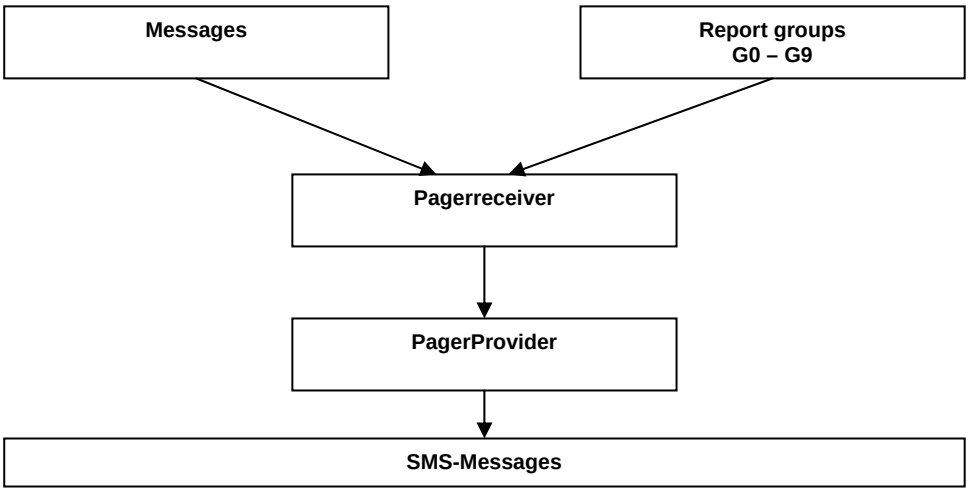
Context Connections – Variables – Normings – report groups – Messages



An SMS-Message is materialized like following



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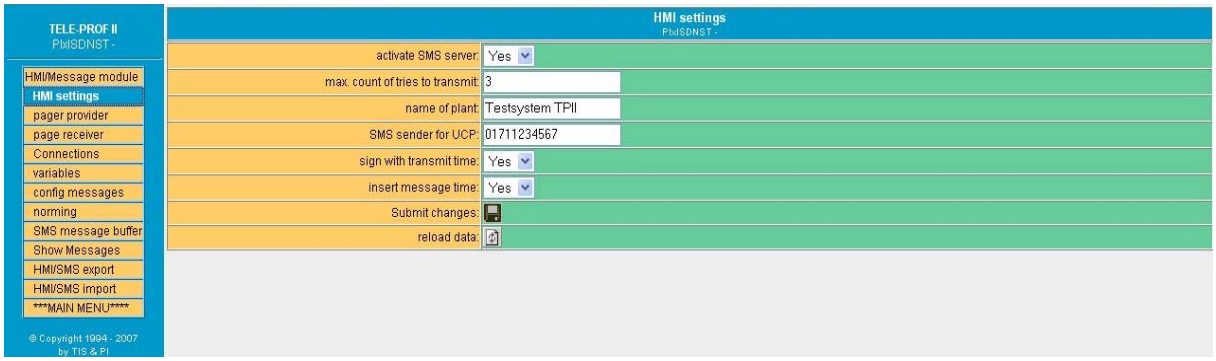
Basical HMI-Settings

Access rights	Level
Write	Superuser
Read / View	U1



To activate a report processing basical settings have to be done. Before activating these settings the messages should be projected.

The meaning of each row:

Row	Usage
activate SMS server	Yes / No
name of plant	This text will be sent to the recipient in the SMS-header, so that he can identify the sender
SMS sender for UCP	At the UCP-Protokoll the phone-number of the sender has to be sent to the SMS-Server.
Sign with transmit time	With „yes“ the transmitting time will be inserted to the SMS-header, important: Set the time correctly.
Insert message time	With „yes“ the time at which the message occurred will be inserted into every message. Thereby the SMS will be longer but the moment at which the message occurred can be protocolled.

SMS message buffer

Access rights	Level
Write	Superuser
Read / View	U2

On the site sms message buffer you can see the queued messages which have not been sent yet. The column “tx trying” shows the number of tries to send the message. This is bigger then 0 when for instance the phone-line does not exist, is busy or the server-settings have not been set correctly. The highest number of tries will be reported to the PLC (see above).

time	page receiver	provider	text	tx trying
09.03.2005 16:43	Mr Maier:017188299382	TD-1 SMS	09.03.2005 16:43: UPS power supply: O F F	1
09.03.2005 16:43	Mr Maier:017188299382	TD-1 SMS	09.03.2005 16:31: Comm.-error:PLC 2(2)	1

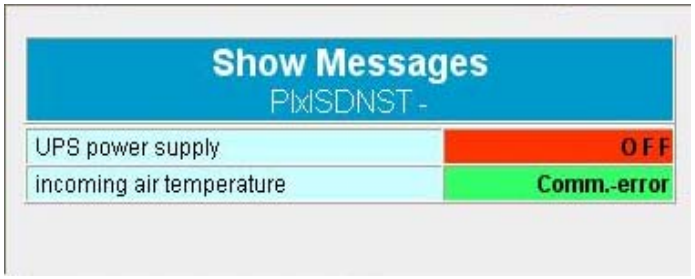
By clicking the symbol every message in the list will be deleted. The messages will not be sent! For test purpose you can remove the phone-cable so you can test the functions of the machine without causing costs for sms-sending.

Show Messages

Access rights	Level
Only reading is possible	U1

In the menu item show messages you can view the current state of the messages. The state of every projected message is shown there. Even those, which can not create messages.
Thereby a state of the machine can be watched without a PLC-programming software

The message window is refreshed every 3 seconds. When a field is marked red it means that the limit has been exceeded.



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8.12 Communication with TELE-SWITCH

8.12.1 Function of the TELE-SWITCH as MUX (compatible with Siemens-MUX 757)

All DIP switches are turned to the following adjustment corresponding to the slave number:

DIP 1	DIP 2	meaning
OFF	OFF	channel 1 to 8 corresponding to slave 1 to 8
ON	OFF	channel 1 to 8 corresponding to slave 9 to 16
OFF	ON	channel 1 to 8 corresponding to slave 17 to 24
ON	ON	channel 1 to 8 corresponding to slave 25 to 30

The remaining DIP switches are all turned OFF. For the calling, the usual PG-BUS-calling is used.

8.12.2 Function as TELE-SWITCH

DIP 3 has to be turned ON, DIP 1 and DIP 2 according to the above table. The TELE-Network device supports with this operation mode only the slave numbers 1 to 16.
The TELE-SWITCH can be operated at the PLC-or PG-socket of a TELE-Network device that is configured as PLC-TELE. In the PG-TELE, the following adjustments have to be made for calling a channel:

Menu item: TELE-SWITCH

1st line: TELE-SWITCH
2nd line: xx to ChaNr: yy

xx = PG or PLC (UP/DOWN key)
yy = Channel 00 (fed-through mode finished)
yy = Channel 01 to 16 (call corresponding slave number)

After this input, the question “Switch? YES/NO“ is displayed:

- YES Input is taken over, channel is called
- NO Input is dismissed, present condition remains

If there is a call, then it is reported whether the call or the transformation respectively were successful or not. After connection clear-down, the SWITCH is automatically deactivated.

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8.12.3 Technical data of the TELE-SWITCH

Supply Voltage	24V DC
(Power) input	12 VA
Functional control	LED display for the channel calling
Working temperature	5 to 55 degree Celsius
Dimensions	Metal casing: 325 x 182 x 42 mm

8.13 Possibillity of Programming of Siemens OPs

With the TELE-Network devices with a software version bigger than 4.41 it is possible to programm Siemens Ops. For this, you have to do following:

8.13.1 Programming with ProTool lite:

With this, you can programm the OP7/17 directly with ProTool lite. You have to connect the programming port of the OP with the PG-Port of the PLC-TELE. On the PG-TELE side, you connect your PC on the same way as you want to programm the plc. After connecting the two modems via telefon line, you restart your OP for beginning the transfer, after this, you change to the menu item Special on your PG-TELE and activate the ProTool 7/17. Now you can transfer your project to your OP. After programming your OP, you can end the ProTool-Option with pressing the ← -key. Now, your TELE-Network device is in the standard programming mode, for example for the S5 or the S7.
By this way, you can also programm the C7, too.

8.13.2 Programming with ProTool:

For programming the bigger Ops, like OP27 / 37, you can´t use the software ProTool lite. For this OPs you use ProTool. This OPs can be programmed only via MPI-Protocoll, because, the standart protocoll of programming is not modem like. For this, you must configure following:

- Connection of PLC-TELE with MPI/PPI-cable and MPI-Netz-Adapter to the OP
- Change devicetyp of PLC-TELE to PLC-S7 300/400
- The ProTool-Software must be installed in the simatic manager
- In your project or the OP must be activated the MPI-Interface for transfer

After connect of the telefon line, you restart the OP for the transfer mode. Now you start your transfer with your ProTool-Software via PC-Adapter and 19200 Baud. After the OP is programmed, you disconnect the telefon line and your OP is ready to work.
This Menthod works with S5 OPs, too. But you need for this way the simatic manager for Step 7. This is only way to programm OPs.

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8.14 Controlling of the TELE-Network-Devices with TAPI-Interface

The Tele-Network-Devices can be controlled with the TAPI-Interface with MS Outlook for example. So you can dial or hang up, without using the keyboard of the tele-network-devices. So, if you have edited more telefon numbers, for example 120, so you don't have the time, to pull down until, you got your telefon entry number 120. So you can controll this with a comfortable software.

You need following configuration:

You connect your PC with the second COM-port with a so-called "Zero-Modem-cable" (it's a cable not 1to1, you have twisted pairs, so 2 to 3, 3 to 2, and so on) to the plc-V24-port of the tele-professional.
After this, you install in your pc a standart modem for this com-port.

Please note following:

TAPI-Controll to TELE-Professional: Dial mode (ton, impulse), count of rings, busy identify you must configure it on the Tele-Professional. (It was testet with Outlook 2000)

1. Connection to plc-v24-port of Device Baudrate: 9600,8,N,1 without Handshake!
2. Choose standart analog modem (with Win 9x or NT please first install, then choose)
3. In the telefon number (MS Outlook: Contacts) you can with following symbols configure following functions:

! => Pin number is following, but it is only a numeric pin allowed, you can´t transfer ascci-chars with the TAPI-function
(=> Baudrate is following
(12 = 1200 Baud
(24 = 2400 Baud
(48 = 4800 Baud
(96 = 9600 Baud
(144 = 14400 Baud (the maximum of the modem)
) => Callback with the RRV-number (max. 9 figures)

For example:
Dial the number 00418762112 with PIN:45671, baudrate 4800 and call back from swiss to germany:
The right entry is: 00418762112!45671(48)0049

The placement of PIN, call back option or baudrate don´t care, it is only iportant, that the telefon number is at first.

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More commands for the TAPI-function

After, you get the connect via telephone line, you have more commands for the TAPI-function via the PLC-V24-port. All commands beginn with “AT[“. You must define every command allone, you can’t send 2 commands in one command line. Every command must be closed with a CR.

command	**function**
AT[A	Connects the PG-TELE to the PLC-port of a PLC-TELE
result	
OK	All is OK
ERROR	Nothing is OK, there must be a failure
You must login	Function can be activated, the other device has a activated pin and there was no login, yet.

command	**function**
AT[B	Connects the PG-TELE to the PG-port of a PLC-TELE
result	
OK	All is OK
ERROR	Nothing is OK, there must be a failure
You must login	Function can be activated, the other device has a activated pin and there was no login, yet.

command	**function**
AT[Dx	Tele-switch function over the PG-Port of the other device. X is for the portnumber, you want to connect, possible values are 1..16
result	
OK	All is OK
ERROR	Nothing is OK, there must be a failure
You must login	Function can be activated, the other device has a activated pin and there was no login, yet.

command	**function**
AT[E	Direct mode without handshakes is activated. It will be used the in the PG-TELE defind parameter for source- and destination-com. After, you have activated this mode, the ending will be only reached, you change the status of the DSR-line (ALT-H for ZOC or TELIX). Or, you press any key on the TELE-PROFessional-II.
AT[F	see for AT[E, only with activated handshakes (RTS/CTS)
result	
OK	Direct mode is activ
ERROR	Function not OK, maybe, source com not correct defined.
Direct mode off	Direct mode is deactivated, somebody with the keypad, or DSL-line
You must login	Function can be activated, the other device has a activated pin and there was no login, yet.

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<table>
<tr><th>command</th><th>function</th></tr>
<tr><td>AT[Gx</td><td>Only for Siemens-TELE-PROFessional-II. Changes the plc-type, x stands for the plc type. Possible values:
Attention: These switch need a few seconds time for to switch
<table>
<tr><td>x</td><td>Meaning</td></tr>
<tr><td>0</td><td>SIMATIC-S5</td></tr>
<tr><td>1</td><td>Not for use</td></tr>
<tr><td>2</td><td>SIMATIC-S5-KOR/MUX/IBX</td></tr>
<tr><td>3</td><td>SIMATIC-S7 300/400</td></tr>
<tr><td>4</td><td>SIMATIC-S7 200 9K6</td></tr>
<tr><td>5</td><td>SIMATIC-S7 200 19K2</td></tr>
<tr><td>6</td><td>SIMATIC-S5 mit F-Typ</td></tr>
</table></td></tr>
<tr><td>result</td><td></td></tr>
<tr><td>OK</td><td>All is OK</td></tr>
<tr><td>ERROR</td><td>Nothing is OK, please check the parameter you used</td></tr>
<tr><td>You must login</td><td>Function can be activated, the other device has a activated pin and there was no login, yet.</td></tr>
</table>

To make a telephone call with ISDN-modem is also possible. For this, you need another command. Please look:

Connect Analogue: ATDT012345...
Connect ISDN: ATDI012345... or
ATDT012345(ISDN

If you want to make a connect with ISDN, you see this in the result message, too:

Connect Analogue: Connect 33200 or sometimes a less baudrate
Connect ISDN: Connect ISDN

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9 Technical data of the Tele-Professional-II

9.1 Mechanical Data

Dimensions	metall case: 279 x 68 x 165 mm
Working temperature	5 to 55 degree Celsius
PLC-interface	TTY/20mA current loop PLC-TELE active, plc-control passive or V24 completely same pinning like a PC
PG-interface	TTY/20mA current loop 100% mechanically and electrically compatible or V24 with 1to1 cable form the PC
MPI/Profibus	Pinning like a plc, connecting to a profius-connector and profibus-cable possible
Ethernet-connector	RJ-45-Plug for directconnection to the network plug. A connection to a PC with a Cross-Over-cable possible.
ISDN-modem	RJ-45-Plug for direct connection to the S0-bus
Analogue modem	33600 HIGH-SPEED, V.42/BIS MNP5

9.2 Electrical Data

Supply Voltage	24V/DC input range 18-36V

The supplied 24V are at the user´s disposal at the PG-socket without any restrictions.

Input	15 VA
Functional control	voltage- and watchdog supervision

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9.3 US-FCC-Rules for devices with us-modem

This equipment complies with Part 68 of the FCC Rules. On the soldering side of this equipment is a label that contains, among other information, the FCC Registration Number and Ringer Equivalence Number (REN) for this equipment. You must, upon request, provide this information to your telephone company.

This equipment uses **RJ12** plugs.

An FCC compliant telephone cord and modular plug are provided with this equipment. This equipment is designed to be connected to the telephone network or promises wiring using a compatible modular jack which is part 68 compliant. See installation instructions for details.

The REN is useful to determine the quantity of devices you may connect to your telephone line and still have all those devices ring when your telephone number is called. In most, but not all areas, the sum of the REN´s of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the REN, you should contact your local telephone company to determine the maximum REN for your calling area.

If your telephone equipment causes harm to the telephone network, the Telephone Company may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice is not practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC.

Your telephone company may make changes in ist facilities, equipment, operations or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.
If you experience trouble with this telephone equipment, please contact **your dealer of this tele-network device, the telephone number is known by yourself**, for information on obtaining service or repairs. The telephone company may ask that you disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning.

This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

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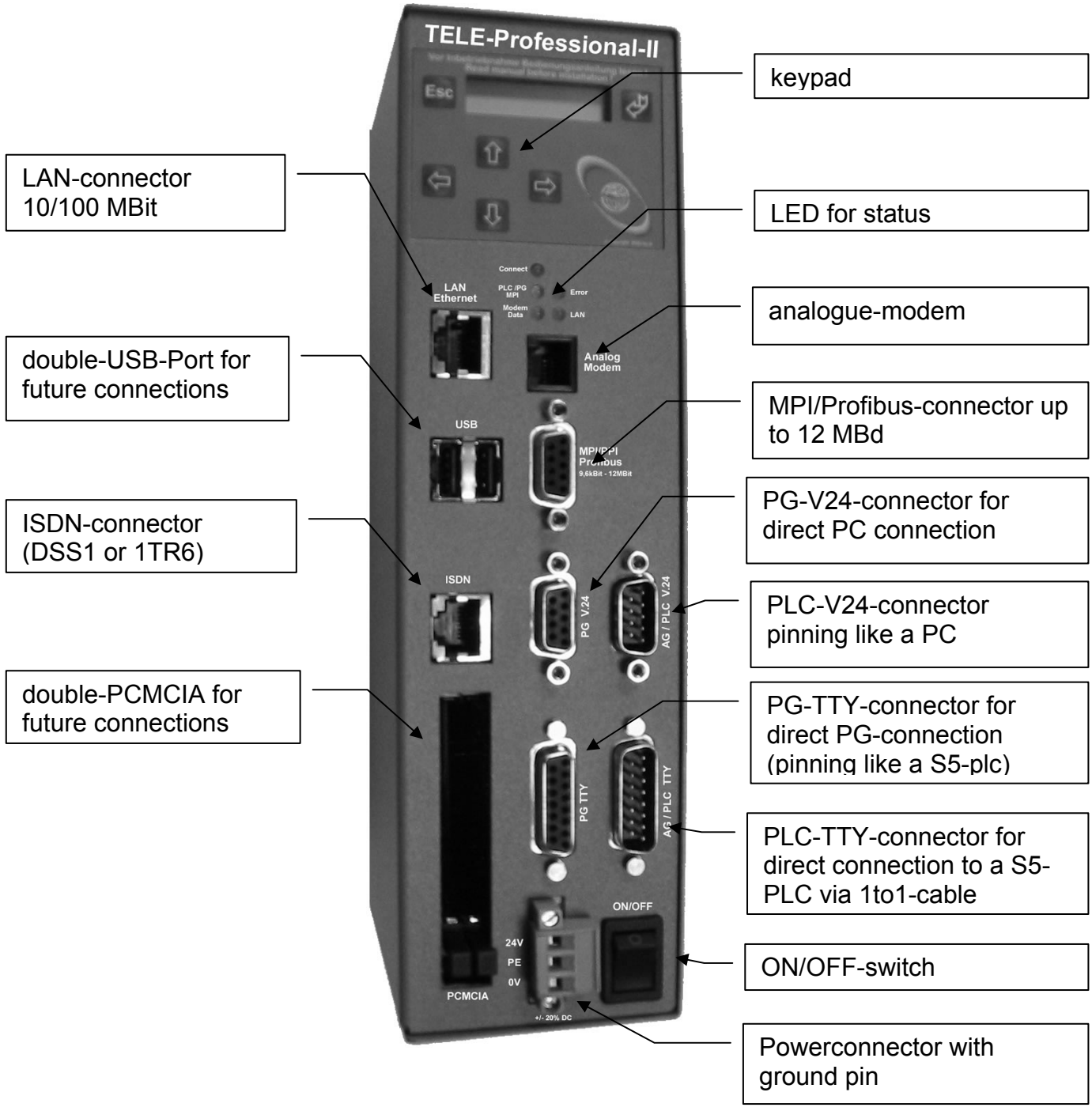
9.4 Pin assignment of the Tele-Proffesional-II

9.4.1 General

On top of the device, there is a keypad with 6 keys and 2 LED for the communication to the person in front of it.



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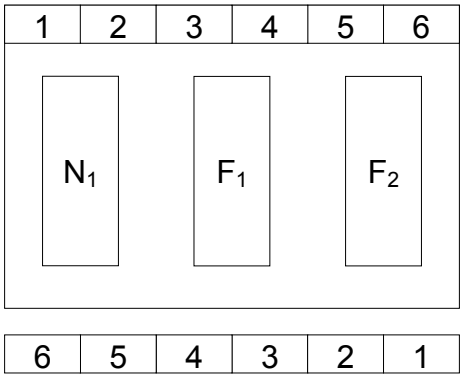
9.4.2 Analogue-modem connector

When connecting the telephone, the cable with the black (TAE-)plug is plugged in the telephone socket (N-contact). Please note that with some plugs a locking device has to be removed with a screwdriver in order to extract the plug from the TAE-socket. The other side, a so-called western-plug, has to be plugged, with the ejector up, in the small hole of the modem. You will hear how the locking device latches. In order to extract the western-plug, simply press down the locking lug and extract the plug.
Normally, you can use every analogue connector, but be shure, that this analogue line the both lines A and B are connect to the middle contacts of your western plug (RJ-11).

9.4.2.1 Assignment of the connection pins of the TAE-SOCKET

A B W E B2 A2 for N_1 und F_1 - connection



A2 B2 E W B A for F_2 - connection

Connections A + B are absolutely sufficient for a modem connection only, without telephones.

With pulse dialling and calling the line with earthing key, the connection E additionally has to be connect to frame at the telephone installation.

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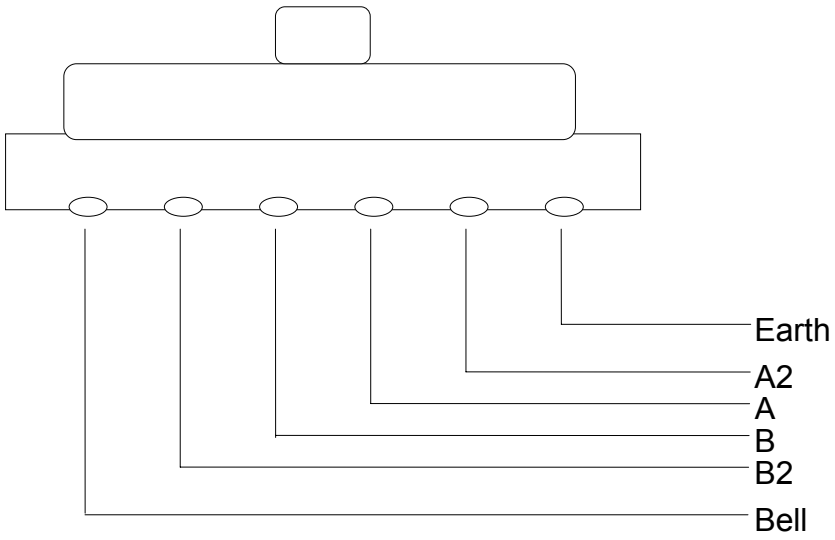
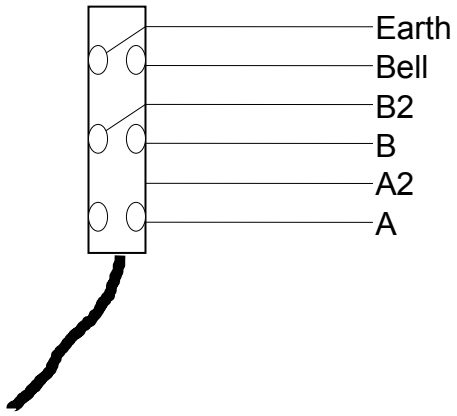
9.4.2.1.1 Assignment of the normal telephone cord

9.4.2.1.1.1 Side of the modem



View from above on the western plug, gold contacts facing down, 6pin type. In this way, the assignment of the western socket in the modem is visible. With the 4pin type, the two pins at either end are left out.

9.4.2.1.1.2 TAE- plug



View from above on the TAE-plug (from the front).

9.4.2.1.2 World-wide use of the TELE-PROFessional-II (modem connection)

Normally, TAE-socket and German cable can always be connected to the corresponding AB-line! In this way, there is a protection against the connection of other phones as well.

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Country	Modem type	Cable
Abu Dhabi	USA	USA
Africa	USA	USA
Algeria	USA	USA
Argentina	USA	USA
Australia	USA	USA
Austria	G	A
Belgium	G	B
Brasilia	USA	USA
Canada	USA	USA
Chile	USA	USA
China	USA	USA with IDD-line [1)]
Columbia	USA	USA
Czech Republic	USA	USA
Denmark	G	DK
Dominikan Republic	USA	USA
Finland	G	G with TAE-socket [2)]
France	G	F
Great Britain	USA	USA
Greece	G	G with TAE-socket
Hong Kong	USA	USA
Hungary	G	G with TAE-socket
India	USA	USA
Indonesia	USA	USA
Ireland	USA	USA
Israel	USA	USA
Island	USA	USA
Italy	G/USA	USA
Japan	USA	USA
Jemen	USA	USA
Kasachstan	USA	USA
Kenya	USA	USA
Korea	USA	USA
Kroatia	USA	USA
Latvia	USA	USA
Luxemburg	USA	USA
Malaysia	USA	USA
Marocco	USA	USA
Mexico	USA	USA
Moldawia	USA	USA
Netherlands	G	NL
New Zealand	USA	USA
Norway	G	G with TAE-socket [2)]
Peru	USA	USA
Philippines	USA	USA
Poland	USA	USA
Portugal	USA	USA
Puerto Rico	USA	USA

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Country	Modem type	Cable
Rumania	USA	USA
Russia	USA	USA
Serbia	USA	USA
Singapore	USA	USA
Slovenia	USA	USA
South Africa	USA	USA
Spain	G	USA
Sri Lanka	USA	USA
Syria	USA	USA
Sweden	S G	S G with TAE-socket [2)]
Switzerland	G/CH	CH
Taiwan	G/USA	USA
Thailand	USA	USA
Turkey	USA	USA
United Arab Emirates	USA	USA
USA	USA	USA
Venezuela	USA	USA

1) The IDD-line is normally available in every big firm in China; otherwise, the communication is very bad, almost like a second parallel phone network.

2) In Scandinavia, please not that calling with inband signalling is possible without problems with the German modem. However, with pulse dialling, the Scandinavian system differs form the German system:
dialling series

German (European) system: 1, 2, 3, 4, 5, 6, 7, 8, 9, 0
Scandinavian system: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9
For a call from Sweden to the following German number:
0049-11833
(information service of the Telekom) the following number has to be input:
1150-22944.

For a world-wide operation with the TELE-Network devices it is normally indispensable to use for each country in which the modem is used the modem corresponding to that country (e.g. for Great Britain a British modem, for Spain a Spanish modem and so on). Experience shows that this is not always possible. Then, the decision has to be made by the user himself/herself.
The above table that shows the usable modem types for several countries is put together according to practical experience. Therefore it is not guaranteed that the corresponding TELE-Network device has the admission for the operation in the country in question. Technically speaking, the US modem works in every country since it does not have the restrictions a German modem has (as for example bell voltage, bell frequency, charging pulse filter and so on).

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9.4.3 ISDN-connector

The TELE-PROFessional-II should be connected from the ISDN-port to the ISDN-plug on the wall with a standard ISDN-cable. But before you can use digital communication, you should be shure and check the protocole of your ISDN. Possible protocols:

- DSS1 (Euro-ISDN)
- 1TR6 (national ISDN)

This protocol has to be configured im the configuration menu. After this, you have to restart the device.
You **must** configure an EAZ/MSN – number of your ISDN-port. This means, the addres of this device in your S0-bus. While, the ISDN-port is a bus structure, so every client of this bus needs a own address. This address is the EAZ or MSN. So, the device knows this address and can ring and lift up, if this address will be called.
Sometimes, the configured EAZ or MSN is the same number of this telephone port, often a normal number between 1 and 999. This address you get from your supervisor of the telephone device.

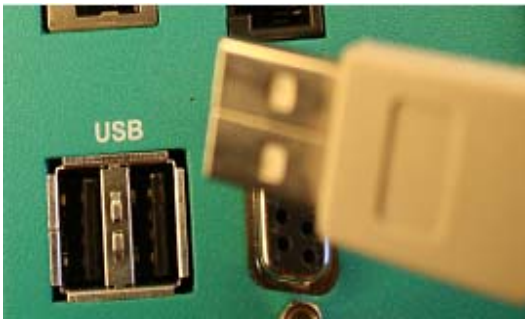
A T T E N T I O N:
A communication with ISDN is without MSN/EAZ is not possible!

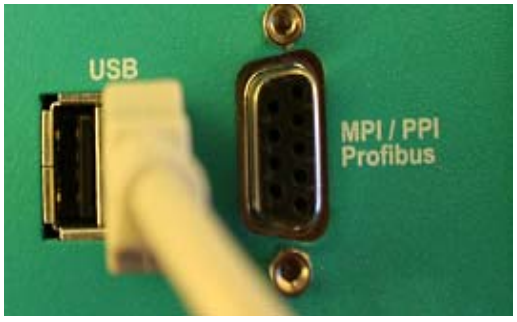
9.4.4 LAN-connector

This connector is an autosensing 10/100 Mbit/s connector. For the connection to a Hub or a network connector, you should use a socalled patch-cable (both sided RJ-45, 1to1, shielded). For the direct connection to a PC, you should use a cross-link-cable for this connection.

9.4.5 USB-connector

On this USB-1.1 compatible connector can be plugged slaves like memory stick or digital cameras. But, if you want to connect slaves like this, you should get support from your dealer, because they must check it and integrate this slave into the firmware of the device.





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9.4.6 PCMCIA-connector (only for version -H)

This PCMCIA-connector can be used for future communication, for e.g. a memory card for extension of the memory or a flash card for firmware-upgrades.

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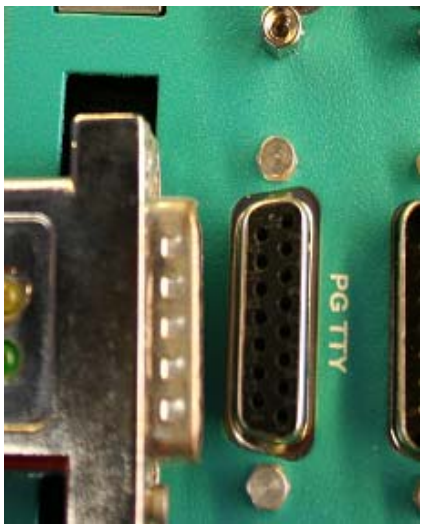
9.4.7 PG-Connection

If the device is defined as PG-TELE, the connection or programming cable which is normally designed for the Siemens-control, is now either plugged in the 15pin D-SUB-socket or 9pin D-SUB-socket right next to it is connected to the serial interface of the PC with a 9pin 1to1 cable.
The 9pin and 15pin D-SUB-sockets right next to it are not used in this setting.



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9.4.7.1 Pin assignment for the PG-socket (TTY):

PIN 1:	M_{ext}
PIN 2:	TTY IN-
PIN 3:	+ 5V
PIN 4:	+ 24V
PIN 5:	ground
PIN 6:	TTY OUT+
PIN 7:	TTY OUT-
PIN 8:	M_{ext}
PIN 9:	TTY IN+
PIN 10:	ground 24V
PIN 11:	20mA for sender
PIN 12:	ground
PIN 13:	20mA for receiver
PIN 14:	+ 5V
PIN 15:	ground

9.4.7.2 PIN assignment for the PG-socket (V24):

PIN 1:	DCD	(data carrier detect)
PIN 2:	TxD	(transmit data)
PIN 3:	RxD	(receive data)
PIN 4:	DSR	(data set ready)
PIN 5:	GND	(ground)
PIN 6:	DTR	(data terminal ready)
PIN 7:	CTS	(clear to send)
PIN 8:	RTS	(request to send)
PIN 9:	RI	(ring indicator)

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9.4.8 PLC-Connection

If the device is defined as AG-TELE, either the optionally available connection cable (interface cable V24⇔TTY) is plugged onto the 9pin D-SUB-socket or the optionally available connection cable is plugged onto the 15pin D-SUB-socket and is then connected to the programming interface of the Siemens-control. In contrast to PG-TELE, a programming system can now be connected either to the unused 15pin D-SUB-socket or to the unused 9pin D-SUB-socket. This means that the control can be accessed by phone from outside and that the co-worker at the face can simultaneously have access to the control with his programming tools.

9.4.8.1 PIN assignment for the PLC-socket (TTY):

PIN 1:	M_{ext}
PIN 2:	TTY OUT-
PIN 3:	N.C.
PIN 4:	N.C.
PIN 5:	N.C.
PIN 6:	TTY IN+
PIN 7:	ground (TTY OUT-)
PIN 8:	M_{ext}
PIN 9:	20mA for receiver (TTY OUT+)
PIN 10:	N.C.
PIN 11:	N.C.
PIN 12:	N.C.
PIN 13:	N.C.
PIN 14:	N.C.
PIN 15:	N.C.

Therefore, a connection to a TTY-compatible interface via a 15pin 1to1 cable is possible.

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9.4.8.2 PIN assignment for the PLC-socket (V24):

PIN 1:	N.C.	
PIN 2:	RxD	(receive data)
PIN 3:	TxD	(transmit data)
PIN 4:	DTR	(data terminal ready)
PIN 5:	GND	(ground)
PIN 6:	DSR	(data set ready)
PIN 7:	RTS	(request to send)
PIN 8:	CTS	(clear to send)
PIN 9:	N.C.	

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9.4.9 MPI/Profibus-connector

This connector has for the bus pins and ground the same pinning like a plc. The TELE-PROFessional can be connected with a 9pin 1to1 male ⇔ male cable to the plc or the profibus. You can use also a standard profibus cable with its own connectors.
It can be provided bus systems from 9600 Baud up to 12 MBaud.

9.4.9.1 PIN assignment for the MPI/Profibus-port

PIN 1:	N.C.	
PIN 2:	N.C.	
PIN 3:	Ltg_B	(MPI/PPI/Profibus line B)
PIN 4:	RTS-AS	(handshake to plc)
PIN 5:	M5V	(signal ground)
PIN 6:	5V Out	(5V Out for terminal resistors)
PIN 7:	N.C.	
PIN 8:	Ltg_A	(MPI/PPI/Profibus line A)
PIN 9:	RTS-PG	(handshake to PG)

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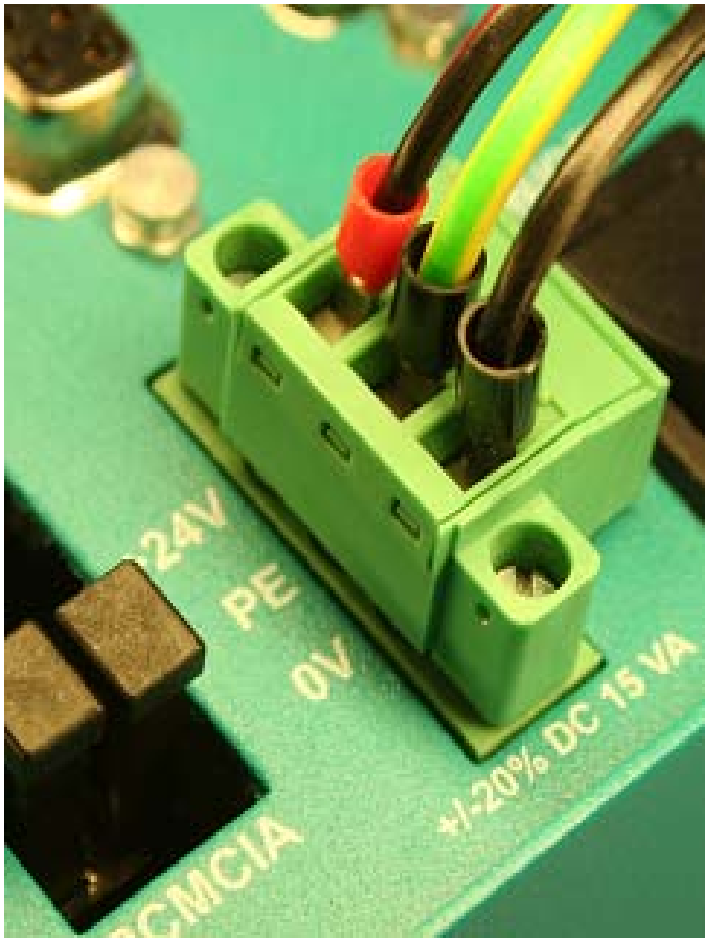
9.4.10 Voltage Connection

For the voltage supply of the TELE-BOOK-device, either the provided plug-in power supply or the existing power supply of 24V/DC ±20% with at least 625mA current is connected to the green 3pin plug. The device can be switched on/off with the power switch on the front side, so you don't have to unplug/plug the green power connector.

So, as you can see the TELE-PROFessional on the picture, we have from up to down following pinning:



+24V DC
PE **PE must be connected allways!**
0V

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9.5 Plc-types

The TELE-Network device can be used with the following plc-controls:

Siemens:

- S5-90 U
- S5-95 U
- S5-100 U
- S5-90 U
- S5-115 U + F
- S5-135 U
- S5-155 U + H

- S7-200
- S7-300
- S7-400

- + H1-function (only for PLC-S5-TELE-devices)
- + L1-function (only for PLC-S5-TELE-devices)
- + L2-function (only for PLC-S5-TELE-devices)
- + FAX-function (only for Siemens-devices)
- + SPS-function (only for Siemens-devices)
- + ASCII-function (only for Siemens-devices)

Bosch:

- CL200
- CL300
- CL400
- CL500

AEG:

- A 120
- A 250

Mitsubishi:

- FX-Serie
- A-Serie

ALLEN Bradly:

- SLC 500 DF1-protocoll + DH485

Klöckner Moeller:

- PS3 plc
- PS4 plc (V24)

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Selectron:
PMC 20

GE Fanuc

Pilz PSS3xxx

Telemechanique Premium TSX57

Please note that for each of the mentioned plc-types, you should ask your dealer, if this plc firmware is integrated in this TELE-PROFessional-II. Sometimes, you can use the older one, called TELE-Professioanl, where you can download the special firmware with the Tele-Manager-Software into the device. The connection between Tele-PROF-II and Tele-Professional is provided.

9.6 Used Ports

Port	Type	Description
9998	TCP	Firmware-Transfer
9999	TCP	Remote-Maintenance (between 2 devices)
9999	UDP	Remote-Maintenance (between 2 devices)
80	TCP	Webbrowser-Access
102	TCP	CP-Mode (RFC1006)

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10 Troubleshooting

Display /Condition	Cause
Display remains dark	Voltage connected? Voltage poled?
Modem does not dial	Telephone line connected? Telephoneline in the correct connector? Dialling method recognised correctly? Parameters for dialling set correctly? Is the phone installation released for data operation? Is the modem connected to an ANALOGUE connector?
Return call does not work	Are the parameter values for the return call set according to the instructions? PLC-TELE and PG-TELE correctly configured?
No connect by dialling	Uses your company a Call-By-Call-Provider? So it is possible, that the line is be multiplexed, and so the carrier ton is be interrupted. Baudrate correctly configured? For some countries it is better, not to dial with the maximum baudrate, it is better to select a baudrate less than 1 or 2 steps
Device doesn´t lift up	Count of rings correctly configured? A - and B -line correctly connected? Telefon-lead coreectly connected?
Hardly ONLINE to the plc	TELE-Network device is earthed correctly? Cable connection between AG-TELE and plc OK? Is the device really an AG-TELE? PG-MUX-Mode correctly configured?
No ONLINE to the plc	Cable connection between AG-TELE and plc OK? Is the device really an AG-TELE? Cable between plc and tele correct or damaged?

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